

Studies in Intelligence

Journal of the American Intelligence Professional

Unclassified articles from *Studies in Intelligence* Volume 54, Number 3
(September 2010)

**Intelligence Community Reform:
A Cultural Evolution**

**Origins and Current State of Japan's
Reconnaissance Satellite Program**

The National Cryptologic Museum Library

Reviews:

***Why Intelligence Fails: Lessons from the Iranian
Revolution and the Iraq War***

***A Fiery Peace in a Cold War: Bernard Schriever
and the Ultimate Weapon***

The Intelligence Officer's Bookshelf



Center for the Study of Intelligence

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE SEP 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE Studies in Intelligence. Volume 54, Number 3, September 2010				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Center for the Study of Intelligence, Central Intelligence Agency, Washington, DC, 20505				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 60	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

This publication is prepared primarily for the use of US government officials. The format, coverage, and content are designed to meet their requirements. To that end, complete issues of *Studies in Intelligence* may remain classified and are not circulated to the public. These printed unclassified extracts from a classified issue are provided as a courtesy to subscribers.

Studies in Intelligence is available on the Internet at: <https://www.cia.gov/library/center-for-the-study-of-intelligence/index.html>. Some of the material in this publication is copyrighted, and noted as such. Those items should not be reproduced or disseminated without permission.

Requests for subscriptions should be sent to:

Center for the Study of Intelligence
Central Intelligence Agency
Washington, DC 20505

ISSN 1527-0874

All statements of fact, opinion, or analysis expressed in *Studies in Intelligence* are those of the authors. They do not necessarily reflect official positions or views of the Central Intelligence Agency or any other US government entity, past or present. Nothing in the contents should be construed as asserting or implying US government endorsement of an article's factual statements, interpretations, or recommendations. Articles written by active intelligence community officers or contractors are subject to prepublication review for classification purposes.

CSI's Mission

The Center for the Study of Intelligence (CSI) was established in 1974 to serve CIA and the Intelligence Community as an organization that could “think through the functions of intelligence and bring the best intellects available to bear on intelligence problems.” The center, comprising professional historians and experienced practitioners, attempts to document lessons learned from past activities, to explore the needs and expectations of intelligence consumers, and to stimulate serious debate about current and future intelligence challenges.

To carry out this mission, CSI publishes *Studies in Intelligence*, as well as numerous books and monographs addressing historical, operational, doctrinal and theoretical aspects of the intelligence profession. It also administers the CIA Museum and maintains the Agency's Historical Intelligence Collection of published literature on intelligence.

Contributions

Studies in Intelligence welcomes articles, book reviews, and other communications. Hardcopy material or data discs (preferably in .doc or .rtf formats) may be mailed to:

Editor
Studies in Intelligence
Center for the Study of Intelligence
Central Intelligence Agency
Washington, DC 20505

Awards

The Sherman Kent Award of \$3,500 is offered annually for the most significant contribution to the literature of intelligence submitted for publication in *Studies*. The prize may be divided if two or more articles are judged to be of equal merit, or it may be withheld if no article is deemed sufficiently outstanding. An additional amount is available for other prizes.

Another monetary award is given in the name of Walter L. Pforzheimer to the graduate or undergraduate student who has written the best article on an intelligence-related subject.

Unless otherwise announced from year to year, articles on any subject within the range of *Studies'* purview, as defined in its masthead, will be considered for the awards. They will be judged primarily on substantive originality and soundness, secondarily on literary qualities. Members of the *Studies* Editorial Board are excluded from the competition.

The Editorial Board welcomes readers' nominations for awards.



CENTER for the STUDY of INTELLIGENCE
Washington, DC 20505

EDITORIAL POLICY

Articles for *Studies in Intelligence* may be written on any historical, operational, doctrinal, or theoretical aspect of intelligence.

The final responsibility for accepting or rejecting an article rests with the Editorial Board.

The criterion for publication is whether, in the opinion of the Board, the article makes a contribution to the literature of intelligence.

EDITORIAL BOARD

Peter S. Usowski, Chairman
Pamela S. Barry
Nicholas Dujmovic
Eric N. Heller
John McLaughlin
Philip Mudd
Matthew J. Ouimet
Valerie P
Michael Richter
Michael L. Rosenthal
Barry G. Royden
Ursula M. Wilder

Members of the board are drawn from the Central Intelligence Agency and other Intelligence Community components.

EDITORIAL STAFF

Andres Vaart
Bruce Wells

C O N T E N T S

<i>Intelligence Community Reform</i> A Cultural Evolution Robert Cardillo	1
--	----------

<i>Open Source Insights</i> Origins and Current State of Japan's Reconnaissance Satellite Program William W. Radcliffe	9
---	----------

<i>Cross References</i> The National Cryptologic Museum Library Eugene Becker	23
--	-----------

INTELLIGENCE IN PUBLIC LITERATURE

<i>Why Intelligence Fails: Lessons from the Iranian Revolution and the Iraq War</i> Torrey Froscher	27
---	-----------

<i>A Fiery Peace in a Cold War: Bernard Schriever and the Ultimate Weapon</i> Matthew P.	31
--	-----------

The Intelligence Officer's Bookshelf Compiled and Reviewed by Hayden B. Peake	35
---	-----------

- *Necessary Secrets: National Security, the Media, and the Rule of Law* by Gabriel Schoenfeld
- *A Time to Betray: The Astonishing Double Life of a CIA Agent Inside the Revolutionary Guards of Iran* by Reza Kahlili
- *The Watchers: The Rise of America's Surveillance State* by Shane Harris
- *Historical Dictionary of Naval Intelligence* by Nigel West
- *The Oxford Handbook of National Security Intelligence* by Loch Johnson (ed.)
- *Structured Analytical Techniques for Intelligence Analysis* by Richards J. Heuer, Jr. and Randolph H. Pherson
- *The Chief Culprit: Stalin's Grand Design to Start World War II* by Viktor Suvorov
- *The Deceivers: Allied Military Deception in the Second World War* by Thaddeus Holt
- *Eyes In The Sky: Eisenhower, The CIA and Cold War Aerial Espionage* by Dino Brugioni

- *Hitler's Intelligence Chief: Walter Schellenberg-The Man Who Kept Germany's Secrets* by Reinhard R. Doerries
- *JOHNNY: A Spy's Life* by R. S. Rose and Gordon D. Scott
- *The Making of a Spy: Memoir of a German Boy Soldier Turned American Army Intelligence Agent* by Gerhardt B. Thamm
- *Rome's Wars in Parthia: Blood in the Sand* by Rose Mary Sheldon
- *Spies: The Rise and Fall of the KGB in America* by John Haynes and Harvey Klehr
- *A Spy's Diary of World War II: Inside the OSS with an American Agent in Europe* by Wayne Nelson
- *They Dared Return: The True Story of Jewish Spies Behind the Lines in Nazi Germany* by Patrick K. O'Donnell
- *Nest of Spies: The Startling Truth about Foreign Agents at Work within Canada's Borders* by Fabrice de Pierrebours and Michel Juneau-Katsuya
- *Son of Hamas: A Gripping Account of Terror, Betrayal, Political Intrigue, and Unthinkable Choices* by Mosab Hassan Yousef
- *Spying on Ireland: British Intelligence and Irish Neutrality during the Second World War* by Eunan O'Halpin

Contributors

Eugene Becker is the president of the National Cryptologic Museum Foundation.

Robert Cardillo was Deputy Director for Analysis at DIA when his article was prepared. He is now Deputy Director of National Intelligence for Intelligence Integration.

Torrey Froscher was Deputy Director for Analysis for the Center for Weapons Intelligence, Nonproliferation, and Arms Control in the Directorate of Intelligence before his retirement in 2006. He now works for CENTRA Technology, Inc.

Hayden Peake is curator of the CIA Historical Intelligence Collection. He served in the CIA's Directorate of Science and Technology and the Directorate of Operations.

Matthew P. is a National Clandestine Service officer currently assigned to CIA's History Staff.

William W. Radcliffe is an open source officer who specializes in Asian security issues. He works on material in three foreign languages.

A Cultural Evolution

Robert Cardillo

“
We need to focus more on cultural change—less observable and less measurable—but infinitely more important than [who] is in charge of overseas intelligence operations.
”

Many recent commentaries on the state of Intelligence Community (IC) reform have focused on the provisions of the Intelligence Reform and Terrorism Protection Act of 2004 (IRTPA) and the organizational issues associated with the creation of the Director of National Intelligence (DNI). Government organizations in particular gravitate to these kinds of observable developments and demonstrations of authority as a measure of success or the lack thereof.^a I believe we need to focus more on cultural change—less observable and less measurable—but infinitely more important than whether the Central Intelligence Agency or the DNI is in charge of overseas intelligence operations. From my perspective, we have achieved significant cultural change since 2004.

There are many ways to define culture. One of the most useful essentially focuses on how we do business. Massachusetts Institute of Technology's Edgar Schein, a well-known

scholar of organizational culture, defines it as:

A pattern of basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration—that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.^b

In the IC, *our analytic tradecraft is our culture*. We often talk about changing the culture, but we can't just make it happen by articulating goals in a strategic plan. There must be some demonstrable change in our tradecraft—our actual daily business processes—and it has to work “well enough to be considered valid” before we can begin to achieve cultural change.

^a See, for example, Patrick Neary, “Intelligence Reform, 2001–2009: Requiescat in Pace?,” *Studies in Intelligence* 54 No. 1 (March 2010).

^b E.H. Schein, *Organizational Culture and Leadership*, 3rd Edition (Jossey-Bass, 2004)

All statements of fact, opinion, or analysis expressed in this article are those of the authors. Nothing in the article should be construed as asserting or implying US government endorsement of an article's factual statements and interpretations.

Culture change often results from a crisis—the so-called burning platform—exemplified by our intelligence failures early in the decade.

Culture change often results from a crisis—the so-called burning platform—exemplified by our intelligence failures early in the decade and the corresponding investigative commissions. Under DNI leadership, the IC has implemented several game-changing initiatives to address two major problems: the quality of the analytic process (identified in the WMD Commission Report) and information sharing (identified in the 9/11 Commission Report). Analytic quality has been largely a top-down process driven by policy changes, especially IC Directive 203, “Analytic Standards,” of 2007. Information sharing has changed through a combination of demographics, technology, and customer requirements, with policy catching up only recently. Great progress has been achieved, but we need to continue pressing on both of these issues to institutionalize changes to the point they become basic assumptions—in other words, part of the analytic culture.

Schein notes that culture can also evolve if driven by leadership with vision and persistence. He suggests that leaders identify a new problem or problems that an organization must address and over time develop the processes and patterns that work against that problem. In that vein, I would challenge the

community to focus now on where we need to be in five to 10 years and begin to drive the cultural changes required to survive and thrive. IC leaders must reinforce the enhanced expectations of our analysts and hold the chain of command responsible.

We are at the pinnacle of our resource growth. Even with our currently healthy top line, in reality, our resources are shrinking as customer requirements continue to expand. I expect that we have as many analysts as we will get in the next 10 years—and I believe we’ve got to leverage this pool of talent more effectively if we aim to avoid strategic surprise.

Analytic Quality

Since I joined the analytic ranks of the Defense Intelligence Agency in 1983, the community has certainly evolved. However, prior to the current round of IC reform, I don’t think we changed the fundamental analytic culture. We learned our skills from mentors—most training was on the job—in a guild-like mentality that emphasized, to different degrees in different agencies, our uniqueness. I exaggerate for effect, but the worst case view was that we thought we had better information than anyone else, and we didn’t feel the need to explain ourselves to

our customers or even to each other. Sure, there were intelligence surprises and shortfalls, but nothing that forced us to fundamentally reexamine our tradecraft—in other words, our culture. And while 9/11 was a spectacular failure in terms of the impact on our country, there was plenty of blame to go around. It was the national intelligence estimate on Iraq’s weapons of mass destruction capabilities that provided the real shock to the analytic system—and shook our cultural foundations. At the highest levels of our trade, we produced a document that was fundamentally wrong. We had to change.

From my perspective, one of the most significant accomplishments in IC reform was the promulgation of ICD 203. ICD 203 codified good analytic tradecraft—much discussed but seldom formally documented in the 50-year history of the IC. Coupled with ICD 206, “Sourcing Requirements for Disseminated Analytic Products,” analysts are now forced to “show their work.” Doing so injects rigor into our processes and products and holds analysts and managers accountable for results.

It has not been a seamless transition. We have struggled with integrating the standards while maintaining the clarity and flow of our written products. But I think that everyone supports the basic premise. More than any other element of the ODNI’s analytic transfor-

mation effort, it has forced a change in the analytic culture—because it has redefined our business process.

ICD 203 mandates regular review of intelligence products for compliance with the standards. Regular self-examination should be a vital part of intelligence analysis, whether it is a formal lessons-learned process or grading against the analytic standards. DIA's Product Evaluation Board (PEB) has been in operation for more than two years, providing feedback to analysts and managers as well as providing invaluable experience for board members to deepen their own appreciation of the standards. According to DIA's PEB data, as well as data from the ODNI evaluators, our performance against most of the analytic standards has steadily improved. My sense is that analysts and managers are still not entirely comfortable with this process, but over time this feedback will become the norm and part of the culture. And a key attribute of that culture needs to be a continual self-assessment and self-correction.

There has been some criticism that the standards drive analysts away from "making the call" because of the emphasis on evidence. My experience tells me this is not the case—the standards simply force us to be clearer about the evidence we have and the evidence we lack. There are

[Analytic] standards simply force us to be clearer about the evidence we have and the evidence we lack.

plenty of ways analysts can communicate uncertainties when the evidence is lacking. Alternative analysis is one approach, and we need to become more sophisticated in employing alternative analysis in a way that will add value to our customers. Overall, given the potential for the IC to take less analytic risk in the post-WMD environment, I believe analysts are stepping out to make clear, crisp, relevant calls—and the process supports and encourages that. I do believe we must be quicker and clearer—as opposed to later and homogenized—and not be afraid to reveal analytic seams in the IC on key issues.

We're still working through the second- and third-order effects of ICD 203. One of the most contentious issues during my tenure in DIA has been the analytic review process. Analysts believe their products take too long to get through the system—and there is some truth to that. Analytic managers believe they are providing much-needed improvements to ensure products are meeting standards—with often differing interpretation of standards. We have developed general guidance to streamline the review process, based largely on an article written by former CIA Deputy Director for Intelligence Martin Petersen in this publication several years ago,

with modifications to incorporate the analytic standards.^a This is still a work in progress, and I'm not delusional in thinking that we have discovered the solution that will make everyone happy. I suspect this conflict is as old as the IC—it also exists in journalism and similar professions. But if we can sustain open dialog along the way, the end result will be better analysis.

Training is an integral component of any cultural change and has been particularly important in light of the large numbers of entry-level analysts joining the community since 9/11. DIA has developed and shared a comprehensive entry-level analytic training program, which has continuously evolved and been improved based on feedback. Course work builds fundamental skills in data gathering, critical thinking, analytic methodologies, analytic standards, IC collaboration (incorporating the Intelligence Community 101 Course), and communications skills. We have also built and continue to tweak midlevel training to deepen those skill areas and prepare analysts for leadership positions. As we build senior-level expert training, I am particularly inter-

^a Martin Petersen, "Making the Analytic Review Process Work," *Studies in Intelligence* 49, No. 1 (2005)

I am optimistic that ICD 501 of 2009, "Information Sharing," ultimately will have the same impact on our culture as did ICD 203.

ested in emphasizing the leadership aspects of senior intelligence analysts and senior intelligence officers, because they play significant roles in shaping and retaining our analytic workforce as they teach the culture to our new members.

Information Sharing

The track record is mixed, but I am optimistic that ICD 501 of 2009, "Information Sharing," ultimately will have the same impact on our culture as did ICD 203. Progress thus far has been driven to a certain extent by the workforce, by technology, and by the customer, but with business processes now in place, we are poised to make huge strides.

Our workforce is forcing us to change. Almost a quarter of the DIA Directorate for Analysis workforce is 30 years old or younger. Whether we believe in generalizations about the generations or not, we have to acknowledge that those who have grown up with the Internet are used to having information available at their fingertips, collaborating online, and networking as a way of life. We baby boomers in leadership have been able to keep up with them, though barely, with technology that leverages these strengths.

A-Space is a virtual work environment that provides IC analysts a common platform for research and analysis and connecting with colleagues. DIA agreed to be the IC executive agent for A-Space in 2007, and it has been gaining capabilities and adherents ever since. A-Space includes HCS/G/ORCON intelligence, for the first time visible to all users on the system rather than by-name communities of interest. This mitigates against the Catch-22 of having to prove you need access to material before you know that the material even exists.

A slightly different approach is being used in the **Library of National Intelligence** (LNI), where you can see the "card catalog" entry for all products but not necessarily access them without the right credentials. As outlined in ICD 501, analysts have the "responsibility to discover" and "responsibility to request" access to products that are relevant to their mission. We have to watch closely to see if this business process works as advertised. If analysts are rewarded for being entrepreneurial—the process works "well enough to be considered valid"—over time we will develop a culture characterized by intellectual curiosity. If they are thwarted or if the process is cumbersome and time-consuming, we will be reinforcing a cul-

ture in which analysts rely on what is easily found on their desktop.

Customers have forced us to share more information. Since 2004 the IC has deployed significant numbers of analysts forward to Iraq and Afghanistan—developing into what I call the expeditionary analytic workforce. Greater operational engagement is occurring—we're leveraging information from the battlefield at the national level and allowing the staff on the battlefield to leverage national capability like never before. Stakes are higher and timelines are reduced.

This type of interaction has become the new, highly demanding norm. In Afghanistan, driven by the International Security Assistance Force's counterinsurgency strategy, we are pushing beyond the traditional boundaries of the IC—aggressively seeking access to critical information from other US government agencies such as US Agency for International Development and sharing broadly and routinely with our allies. Of note, we have built on our theater experience with allies to create the first-ever multinational intelligence fusion center in Washington in the DIA Afghanistan-Pakistan Task Force. This fusion center can be a laboratory for building the new processes and ultimately culture of information sharing. Our new expeditionary culture is changing not only how we do business, but for

whom we do it, as we must engage the broader US government and international partners to address challenges in Iraq and Afghanistan.

Lagging somewhat behind technology, demographics, and mission imperatives was the formal implementation guidance for information sharing. DNI McConnell signed ICD 501 as one of his last official acts, and DIA initiated the first official ICD 501 “case” in 2009. We have worked through many of these issues—mostly to DIA’s satisfaction. If we continue to work the system and get results, without compromising sources and methods, which is the driving force in the old culture, we will ultimately institutionalize the change.

Positioning for the Future

While I’m more than satisfied with our progress to date, we must begin to position ourselves for the future. I believe we need to start planning now for the inevitable decline in budgets and resources. Analysts are a finite resource; we need to make the best use of their time and natural talents—first, making each analyst even more effective, and second, making our community more effective—by creating processes and a culture that enable IC analysts to successfully address the most important challenges facing our nation.

Analysts currently spend a lot of time doing work that is some-

The balance between current and strategic analysis has been an issue for as long as I’ve been an analytic manager, but given the prevailing forces of our customers and our culture, it is likely to worsen without significant management attention.

what ancillary to analysis. Data gathering is one challenge. Between open-source resources, message-handling systems, Intellipedia, Intelink, A-Space, LNI, and discrete dissemination mechanisms for sensitive intelligence, analysts could spend all day, for many days, seeking data. Once gathered, data can be cumbersome to array and analyze in ways that help make sense. Moreover, as an unintended consequence of ICDs 206 and 501, analysts are spending a considerable amount of time on the mechanics of sourcing and metadata tagging their products, which is not the best use of their time. We need to support them with better tools so they can spend more time on the actual analysis as opposed to the front- and back-end of the process.

However, better tools will enable us to produce more products—they won’t necessarily drive analysts to do more analysis. DIA—and the larger defense intelligence enterprise—is a very product- and task-driven culture. We have many customers with a multitude of requirements, and we pride ourselves on our responsiveness. We almost never say no.

Making analysts more efficient, without creating other

measures, will simply enable analysts to respond to more tasks. They won’t necessarily be more effective against our long-term intelligence challenges. As we all know too well, what the customers ask about today may not be what they need to know about tomorrow. If we aren’t performing analysis on strategic long-term issues that may result in a crisis 10 years from now, we aren’t doing our jobs. But because no one is asking and tasking, we don’t do as much as we should.

The balance between current and strategic analysis has been an issue for as long as I’ve been an analytic manager, but given the prevailing forces of our customers and our culture, it is likely to worsen without significant management attention. We initiated defense intelligence strategic research plans in 2009, and we are continuing to develop and refine the plans and the business processes associated with them. Only through senior-level attention to results—tasking the organization to solve the problem—will we sustain focus on long-term analysis.

Sharing the Burden

Even in the best of worlds, DIA could not do it alone, which brings me to my second point.

"Is DIA defense intelligence or intelligence for defense?"

We need to do a better job of burden-sharing to make ourselves more effective as a community. *Intelligence Today* has great potential to drive information- and burden-sharing among IC organizations. While the publication's intent is to better support our customers by providing the best production from across the community, it will create an impetus to collaborate and share as analysts have more insight into what other organizations are producing. If nothing else, perhaps we'll be embarrassed by the redundant and duplicative production—about which we can no longer claim ignorance.

We still work in a free-for-all environment: agencies are writing on what they want to write. We are still competing against one another on many issues, the proverbial kids' soccer game. While competitive analysis is good to some degree, we cannot afford to compete in everything. With ever-expanding requirements and likely declining resources, we need to think now about how to task-organize ourselves better.

During the last major downsizing of the IC in the 1990s, we created the DoD Intelligence Production System, now the Defense Intelligence Analysis Program (DIAP). We squeezed out some duplication among the services by creating the Combatant Command Joint Intelligence Centers and distributed

coverage of foreign weapons systems among the service intelligence centers. DIAP is not perfect by any means. However, there is an effective business process in place to task across organizations. Something that was revolutionary when it was introduced now is ingrained in the defense intelligence community culture. It is simply assumed that an intelligence requirement on submarines will be routed to the Office of Naval Intelligence and that a requirement on tanks will be routed to the National Ground Intelligence Center and that they have the right expertise and will respond appropriately. There is a level of trust that we need to build in the larger IC.

One of my earliest discussions with my leadership team was over our mission statement. We got hung up on the question: is DIA defense intelligence or intelligence for defense? Our current charter says that "DIA shall satisfy military and military-related intelligence requirements." My view is that we are operating as "intelligence for defense" when we should be operating as "defense intelligence" and deferring to other IC organizations with greater capability on many issues. Threat finance and sociocultural analysis are examples of mission areas in which we are engaging with few resources and to little effect, but we are unable to realign more dollars or people from tra-

ditional missions such as military capabilities without creating unacceptable risk.

Yet every time I've suggested that we rely more on other organizations for certain topics, my analysts and managers express a lack of confidence that those organizations will be as responsive as required when a flag officer or senior political appointee needs an answer. I cannot speak for other organizations, but I suspect there is a well-founded fear that the DoD behemoth would quickly take over all available bandwidth if allowed to task at will. But nothing will work if there is no process, much less confidence that the process will work as advertised. We need to develop a process that addresses both of these fears and to *demonstrate that it will work* before we can begin to build a true community culture.

Envisioning the Future

In many respects it took 20 years for the results of the 1986 Goldwater-Nichols Act to change the culture of the US military. Joint duty is not just mandatory for promotion to flag rank, it is seen as desirable for any military career. Officers without regard to service affiliation are now fully integrated in combatant command structures up to the highest levels. It used to be assumed that an Army or Marine officer would be in charge of the US Central Command—it is, for the most part, land warfare. And the US Stra-

tegic Command would always be run by an Air Force general or a Navy admiral—who else would know how to launch nuclear missiles? It wasn't until the past decade that this paradigm was broken (General Cartwright at USSTRATCOM in 2004, Admiral Fallon at USCENTCOM in 2007). Thus, what these changes really challenge is our culture, which is the hardest to achieve but offers the greatest payback.

What might the IC analytic community look like in 2025, 20 years after passage of the IRTPA? I would expect that on the individual level, analysts will be active and adept at seeking out information from all sources—IC, other government agencies, allies, and open sources. They will routinely ask for, and usually receive, access to highly classified intelligence that relates to their subject area. They will be able to ingest and filter enormous quantities of data with advanced tools, and perform multiple structured techniques to array, evaluate, and display information. They will seamlessly apply the analytic standards as part of their thought process and routinely incorporate feedback, evaluations, and lessons learned into their work. They will be practiced at developing products (whether written, oral, or multimedia) that clearly communicate assumptions, evidence, and assessments to our customers and will easily tailor

It is the responsibility of IC leaders to set the conditions that will allow our newest, talented generation of analysts to help our customers succeed.

products to different audiences and classification levels.

At the organizational level, the National Intelligence Analysis and Production Board (NIAPB) will have assigned each member specific topic areas on which that member is expected to maintain the IC's knowledge base. These organizations will have developed deep, specialized experience in the areas assigned. Our analysts will be fully networked and they will know whom to call for expertise on a specific issue, and we will be able to route requirements, regardless of customer, to the appropriate organization. The NIAPB and the National Intelligence Council will have identified long-term strategic research requirements, assigned responsibility for them to specific organizations, and will regularly assess progress, identify shortfalls, develop mitigation strategies, and reevaluate the need.

In Sum

Just as was true for Goldwater-Nichols and DoD, the DNI is challenging the IC culture at its core. Where it was once insular and guarded, the analytic environment is much more interconnected and open. This attitude and acceptance are not

uniform across the board to be sure, but real change has begun. And the newest generation of analysts brought on during this last decade knows no other way. With this foundation of collaboration and engagement, I cannot be more excited about the prospects for IC leadership as this generation moves into the senior ranks over the next decade.

We have had a very successful track record thus far in changing the way we do business. I commend the ODNI staff, the analytic leadership of all IC organizations, and the analysts themselves for redefining our tradecraft and our culture. But IC reform is a continuous process. I challenge all of us to consider the next phase, identify the problems we must solve, and create the new processes that will take us into the future.

It is the responsibility of IC leaders to set the conditions that will allow the newest, talented generation of analysts to help our customers succeed. The raw materials are in place, much of the structural foundation is there, and we're engaged with our customers like never before. Our challenge is to realize this potential.

❖ ❖ ❖

Origins and Current State of Japan's Reconnaissance Satellite Program

William W. Radcliffe

“
The November 2009 launch marked the continuation of Japan's reconnaissance satellite program, which put its first satellites into orbit in early 2003.
”

On 28 November 2009, Tokyo successfully launched its fifth indigenously produced *joho shushu eisei* or “intelligence-gathering satellite.” According to Japanese media, this second-generation satellite can identify objects as small as 60 cm, a marked improvement over Japan's first generation electro-optical satellites that were only able to identify objects as small as 1 m. The November 2009 launch marked the continuation of Japan's reconnaissance satellite program, which put its first satellites into orbit in early 2003. Two more satellites were successfully launched individually in late 2006 and in early 2007—a pair of satellites had been lost in a catastrophic launch failure in late 2003, and one of the original pair launched in 2003 reportedly ceased functioning in March 2007. The satellite orbited last year was to complete a three-month testing period before replacing the first electro-optical satellite launched in 2003, which was designed to have a five-year lifespan.^a

It is commonly held that North Korea's August 1998

Taepo Dong missile launch over the Japanese archipelago spurred Tokyo to undertake a crash program to build and launch its own reconnaissance satellites. A survey of the open source record of events prior to the summer of 1998, however, shows that Japanese political leaders were in the final stages of reviewing plans for a reconnaissance satellite program using technology under development since the 1980s.

Officials from the Liberal Democratic Party (LDP), the Cabinet Intelligence and Research Office (CIRO), and the then-Defense Agency (DA) had been actively studying the possibility of establishing a program to build and launch dedicated reconnaissance satellites since at least the early 1990s. By August 1998 Japanese political leaders were in discussions with Japanese conglomerates to build and launch reconnaissance satellites. The advanced nature of the discussions and Japanese technology firms'

^a “Japan Launches H-2A Rocket Carrying New Intelligence-Gathering Satellite,” Kyodo World Service, 28 November 2009.

All statements of fact, opinion, or analysis expressed in this article are those of the authors. Nothing in the article should be construed as asserting or implying US government endorsement of an article's factual statements and interpretations.

Decades of experience in developing satellite and remote sensing technologies provided the basis for the rapid construction and launch of reconnaissance satellites.

decades-long experience in developing satellite and remote sensing technologies provided the basis for the rapid construction and launch of reconnaissance satellites.

Origins

By the early 1990s, Japanese government-supported research into satellite and remote-sensing technologies was coming to fruition. The Science and Technology Agency (STA), responsible for supporting research in the area, had been deeply involved in research and development of remote sensing technologies for research observation satellites since the mid-1980s.

In partnership with Japan's National Space Development Agency (NASDA), STA supported development of the Marine Observation Satellites (MOS-1 and MOS-1b), launched in February 1987 and February 1990, respectively; the Japan Earth Resources Satellite (JERS-1), launched in February 1992; and the Advanced Earth Observation Satellite (ADEOS).^a STA was also in the preliminary stages of developing the Advanced Land Observation Satellite (ALOS), which would have a resolution of sev-

eral meters and at that time was scheduled to be launched in 2002. The Agency would draw heavily from technology developed for ALOS in building its first-generation reconnaissance satellites in the early 2000s, as detailed below.

Moreover, Tokyo employed its indigenously developed observation satellites for reconnaissance in the late 1980s and early 1990s. In August 1993, an unnamed "military official in Tokyo" provided the *Yomiuri Shimbun* with three overhead imagery photos of Chinese airfield and port construction on Woody Island in the disputed Paracel Islands. The photos were taken from the MOS—Japan's first earth observation satellite.

The newspaper published the images in its 21 August 1993 edition. The photos showed the progression of construction activity on the island on 14 November 1987, 14 June 1989, and 17 April 1991. The first photo showed no activity; the second showed evidence of a port facility and airstrip construction begun sometime in 1988. The final image showed that dredging operations had been completed and a port facility large enough to support a 4,000-ton frigate or submarine was functioning, according to the unnamed "military official" quoted by *Yomiuri*.^b

Notwithstanding the relatively poor resolution, the imagery's implication was clear: a Japanese-built satellite was producing overhead imagery of possible foreign military sites in Asia. And while the *Yomiuri Shimbun* did not report specifically which offices had access to the imagery, the DA most likely had seen the photos; it was by then purchasing imagery from commercial vendors. The DA had purchased and analyzed imagery from Landsat (with a resolution of 30 m) since at least 1985 and from France's Spot satellite (with a resolution of 10 m) since 1987.^c The Ground Self-Defense Forces (GSDF) had also ordered reconnaissance photography from Landsat in the early 1990s of regions around Japan including the Russian-held Northern Territories.^d By the time Tokyo launched its own reconnaissance satellites in 2003, it had more than a decade of experience using overhead imagery.

^b "Chugoku ga Seisashoto ni Wan mo Kensetsu, Nansashoto de no Sakusen Yoi ni, *Yomiuri Shimbunsha ga Eisei Shashin wo Nyushu*" [China Constructs Port on Paracel Islands, Allows For Easy Operations in Spratly Islands; Yomiuri Receives Satellite Photos], *Yomiuri Shimbun*, 21 August 1993: 4.

^c Taoka, Shunji "Japan's Turning Point Toward Spy Satellites and Information Independence; Decision Made To Launch Satellites in Four Years," *Aera*, 11 January 1999: 46–50.

^d "Jieitai no Eisei Riyo, Honkakuka; Supabado-B Tosai no Chuokeiki 7gatsu Kado" [SDF Use of Satellites Taking Shape; Transponder on Superbird-B Operational from July], *Asahi Shimbun*, 31 May 1992: 3.

^a Science and Technology Agency, "Roles and Activities 1994," 21 February 1995, 1–38.

Tokyo began to actively explore the possibility of creating a reconnaissance satellite program dedicated to government use in 1991, as the US Operation Desert Storm in Iraq drew to a successful conclusion and as the political situation in Eastern Europe, the Soviet Union, and on the Korean peninsula proved increasingly uncertain. On 6 March 1991, during interpolations at the House of Representatives' Foreign Affairs Committee, Foreign Minister Taro Nakayama, speaking of the rigors involved in conducting diplomacy and gaining timely information from counterparts abroad, expressed support for introducing reconnaissance satellites. "If we don't receive intelligence from America we won't know anything," he said, and therefore "of course it would not be strange for Japan to have its own so-called diplomatic satellite [*gaiko eisei*]."

Pointing to the increasingly precarious political situation around Japan, he said the important "thing to think about is watching the military situation and military maneuvers in the entire Asian region using reconnaissance satellites [*teisatsu eisei*]."^a With this political mindset gaining ground within the LDP, CIRO began a "top secret" study of reconnaissance satellites as early as 1991, according to the security

^a *Kokkai Kaigiroku*, "Shugiin: Gaimu Iinkai," No. 5, 6 March 1991, <http://kokkai.ndl.go.jp/>.

Tokyo began to actively explore the possibility of creating a reconnaissance satellite program dedicated to government use in 1991.

affairs journalist Tsuyoshi Sunohara.^b

Following North Korea's test launch of Nodong missiles into the Sea of Japan in May 1993, the DA's Defense Policy Bureau also began studying the possibility of introducing reconnaissance satellites. The bureau at the end of January 1994 finalized a then-classified report, called the "Outline for Photo-Reconnaissance Satellites." The study examined the possibility of building indigenous satellites with the help of four major Japanese defense contractors—Mitsubishi Heavy Industries (MHI), Mitsubishi Electric (MELCO), NEC, and Toshiba. MHI would provide its H2 rocket technology to launch the indigenous satellites, and the other companies would develop and build the satellites and components.

Remote-sensing technology developed by STA could also be used on the satellites, according to the outline. The bureau noted, however, that a constellation of five to seven satellites would cost up to ¥1 trillion, not a small sum for a country mired in recession. The fact that this study took place was leaked to

the *Mainichi Shimbun* in August 1994, as Tokyo neared completion of its first post-Cold War National Defense Program Outline revision.^c

The same week the "Outline" was leaked, the government released a rather forward-looking report prepared by a nine-member Defense Policy Council chaired by Kotaro Higuchi. The Higuchi report, prepared at the same time as Tokyo was conducting a review of its National Defense Program Outline, suggested that Japan should develop reconnaissance satellites, strengthen its C4I capabilities, build a missile defense system, and incorporate midair refueling capabilities.

In the summer of 1994, however, the newly inaugurated Tomiichi Murayama administration—the country's first Japan Socialist Party (JSP)-led administration in over a generation—was not in a position to support such wide-ranging proposals. Many members of the JSP continued to refuse even to recognize the constitutionality of the Self-Defense Forces (SDF), and the 72-year-old Murayama had great difficulty

^b Sunohara, Tsuyoshi, *Tanjo Kokusan Supai Eisei: Dokuji Johomo to Nichibei Domei* [The Birth of an Indigenous Spy Satellite: Independent Intelligence Network and the Japan-US Alliance] (Nihon Keizai Shimbunsha, 2005), 7–8.

^c "Teisatsu Eisei, Hoya Fukume Kento; 'Kaihatsuhi Ha Ichhoencho'—Boeicho Ga Himitsu Kenkyu Ripoto" [JDA Secretly Studied Reconnaissance Satellites Including Possession; 'Development to Cost Over 1 Trillion Yen'], *Mainichi Shimbun*, 15 August 1994: 1.

The DIH's imagery division will start [in 1997] as a section to buy commercial imagery and conduct imagery data processing.

in convincing his party to change its platform in this regard as he attempted to gain greater credibility in foreign affairs. The Murayama administration was in no position politically or ideologically to support the development of reconnaissance satellites, and thus a possible program would not be discussed openly for another 18 months, following the inauguration of an LDP-led government.

Shortly after the LDP regained power in January 1996, with Ryutaro Hashimoto becoming prime minister, the party's Research Commission on Foreign Affairs and the Research Commission on Security began to hold joint meetings on the possibility of introducing indigenously built reconnaissance satellites. Their first meeting on the subject, on 15 May 1996, was attended by officials from the Ministry of Foreign Affairs (MOFA), the DA, and representatives of Japan's electronics giant NEC.

The NEC representatives stated that a reconnaissance satellite, a second satellite to serve as a spare, a data-transmission satellite, and construction of a ground station would cost roughly ¥210 billion and could be operational by 2003. The representatives claimed their reconnaissance satellites would have 30-cm resolution,

which they said was very near US capabilities.^a Potential satellite capabilities aside, NEC's participation at the meeting suggested that discussion within the LDP had moved beyond *whether* to build reconnaissance satellites to *how* they could be built.

Following these initial discussions, MOFA requested funds to study the reconnaissance satellite issue in the Japanese FY1997 and FY1998 budgets, although the requested amounts—a mere ¥5.24 million in FY1998, for example—were miniscule.^b Moreover, MOFA stressed that the money was to be spent reviewing the idea only and could not be used for research or development. Part of the reason MOFA could not budget more money was political: the LDP was still in a coalition government with the JSP and was constrained in providing funding for even small government studies of a potential reconnaissance satellite program. The LDP remained hopeful, however, and continued to review plans internally in 1997 and 1998.

Indeed, as the Defense Intelligence Headquarters (DIH) was

established in early 1997, it was increasingly clear that Tokyo envisioned some sort of reconnaissance satellite program in the medium-term. As the politically well-connected daily *Sankei Shimbun* noted ahead of the DIH inauguration on 4 January 1997, "The DIH's imagery division will start as a section to buy commercial imagery and conduct imagery data processing. The DA, with a plan to possess its own satellites in the future, will accumulate analytical know-how" in this division.^c With Japan's technological base and a basic analytical structure in place, all that was needed was a political decision to move forward with a reconnaissance satellite program. This in turn required solid public backing, which at the time was ambivalent, given the country's continued economic malaise.

The LDP Commissions on Foreign Affairs and Security met jointly again in the summer of 1998. On 15 August—two weeks before North Korea tested its Taepo Dong missile—NEC representatives again submitted a study on a reconnaissance satellite program, asserting that the company could build two reconnaissance satellites and one data-relay satellite with "initial funding of

^a Haruyuki Aikawa, "LDP Researches Domestic Spy Satellite Development," *Mainichi Shimbun*, 16 May 1996.

^b "US Opposes Japan's Plan for Spy Satellites," Kyodo News Agency, 7 January 1998.

^c "Joho Honbu Kongetsu-matsu ni Hassoku, Eisei Gazo no Busho mo" [Defense Intelligence HQ To Commence Operations at the End of This Month, Will Have Satellite Imagery Posts As Well], *Sankei Shimbun*, 4 January 1997: 3.

approximately ¥210 billion.”^a But by this point, two years after the LDP had begun actively entertaining proposals for a reconnaissance satellite program, NEC's rival, MELCO, had prepared a proposal of its own.

On 25 August, MELCO President Ichiro Taniguchi presented his company's ideas on building reconnaissance satellites at the LDP's “Science, Technology, and Information Roundtable Discussion.”^b He told the 18 representatives that not only would his company's satellites provide for greater national security, they could also be used to ascertain damage after large-scale natural disasters and keep watch over Japan's long coast lines.^c Following the 1995 Hanshin earthquake and recent North Korean infiltrations into South Korean waters in 1996, these were increasingly important considerations—and saleable to the public. The price, however, remained about the same at just over ¥210 billion.

^a Yoshihiko Ninagawa, “STA, NASDA Study Improved Satellite Monitoring Resolution,” *Sankei Shimbun*, 20 September 1998: 1.

^b Shunji Taoka, “Japan's Turning Point Toward Spy Satellites and Information Independence; Decision Made To Launch Satellites in Four Years,” *Aera*, 11 January 1999: 46–50.

^c Tsuyoshi Sunohara, *Tanjo Kokusan Supai Eisei: Dokuji Johomo to Nichibei Domei*, [The Birth of an Indigenous Spy Satellite: Independent Intelligence Network and the Japan-US Alliance] (Nihon Keizai Shimbunsha, 2005), 88.

The [Taepo Dong] launch [in 1998] thus gave the LDP justification to proceed openly with a reconnaissance satellite program.

Six days later, North Korea launched its intermediate-range Taepo Dong missile over Japan. While Pyongyang claimed to have launched a satellite into orbit, Japanese leaders were extremely concerned, as the launch unequivocally demonstrated that the entire Japanese archipelago was within range of North Korean missiles. The launch thus gave the LDP justification to proceed openly with a reconnaissance satellite program.

At a specially convened LDP meeting of local representatives to discuss the missile launch, Prime Minister Keizo Obuchi, who had recently taken over the premiership from Hashimoto, declared it “outrageous” that North Korea had “launched [a missile] over Japan without prior notification.” Obuchi informed the audience that his administration had “instructed ministries and agencies concerned to study what [kind of satellite] we would be able to launch and what functions it would be able to perform.”^d A reconnaissance satellite, it was widely argued, should at a minimum provide Tokyo with notification of preparations for future launches from North Korea.

^d “Obuchi Supports Launching ‘Multipurpose’ Satellite,” Kyodo News Agency, 10 September 1998.

Political discussions and further review of reconnaissance satellite proposals then proceeded rapidly. The LDP established a “project team to study the feasibility of introducing an intelligence satellite.” The team held its first meeting on 10 September, the very day of Obuchi's speech. Unfortunately for NEC, however, executives at the company had just been implicated in a scandal of overcharging the DA and NASDA for contracts. Also that day, senior executives at several companies, including NEC, were arrested and charged with bilking the DA out of millions of yen in defense contracts.

Although NEC was not out of the running for the satellite contract—it had significant technical experience as a result of its work on the ALOS—MELCO was becoming the early, untainted favorite among LDP officials eager to establish a reconnaissance satellite program quickly. By November, when the LDP officially announced the commencement of the program, 11 NEC executives had been arrested in connection with the scandal, and its chances for winning the satellite contract were ruined.^e

Officials from MELCO submitted their detailed proposal,

^e “NEC Executive Indicted in Procurement Scandal,” Kyodo, 28 October 1998.

Within six months of the Taepo Dong launch, Japan was officially on the road to building its own reconnaissance satellites.

titled "Study Concerning Multipurpose Information-Gathering Satellite System," to the LDP a month later, on 14 October 1998.^a With NEC out of the running, MELCO was the only real choice left to LDP officials, and the LDP approved MELCO's plan in November. The cabinet approved construction of four satellites—two optical and two synthetic-aperture radar (SAR) satellites—on 22 December.^b By spring of 1999, the Space Activities Commission, in charge of setting Japan's space policy and—more importantly—budgets, formally approved the program and put money into the FY2000 budget to start construction.^c Within six months of the Taepo Dong launch, Japan was officially on the road to building its own reconnaissance satellites, at an initially projected cost of more than ¥200 billion.

During the final stage of the approval process, in March 1999, Japan had another security challenge that served to underscore the need for improved intelligence collection capabilities. US reconnaissance satellites and Japanese SIGINT facilities had identified

apparent fishing vessels from North Korea lingering suspiciously off the coast of the Noto Peninsula. The Japan Coast Guard and units from the Maritime Self Defense Force attempted to halt and board the vessels, but they fled Japan's exclusive economic zone and were later thought to have returned to their base in Ch'ongjin.

The incident also reinforced the Japanese perception of a growing threat from North Korea, and Japanese media began to cite yet another reason to launch reconnaissance satellites. The conservative newspaper *Sankei Shimbun* observed in an article on intelligence satellites, following the Taepo Dong launch, "There emerged a heightened need for using the reconnaissance satellites" to watch for "spy ships" originating from North Korean ports.^d

ALOS, "Parent" of Reconnaissance Satellites

For technology and expertise, Tokyo immediately turned to the domestic satellite then under development, ALOS. With development beginning in the early 1990s, ALOS was to be Japan's most advanced

observation satellite to date. It was to have three main sensors: the Panchromatic Remote Sensing Instrument for Stereo Mapping (PRISM), with 2.5-m resolution, the Advanced Visible and Near Infrared Radiometer type-2 (AVNIR-2), and the all-weather Phased Array type L-band Synthetic Aperture Radar (PALSAR) with a 10-m resolution. Importantly, MELCO had been a major contractor on the project. Once the reconnaissance satellite program was approved, the company began work using technologies developed initially for ALOS.

The LDP, as Japan's ruling party, had announced its intention to use ALOS technologies for reconnaissance satellites in its "Proposals on the Introduction of Intelligence Satellites" in early November 1998.^e A month later, after the government formally approved the program, the former chief of development for the ALOS project was named the first director and acting program manager of the "Preparatory Office for Intelligence-Gathering Satellites" at NASDA.^f

On 1 April 1999, the first day of the new fiscal year, Chief Cabinet Secretary Hiromu Nonaka announced the decision to

^a Taoka.

^b "Cabinet Approves Plan To Launch Spy Satellites," *Kyodo News Agency*, 22 December 1998.

^c "Space Activities Commission Decides on FY2000 Space Budget Plans," *Nikkan Kogyo Shimbun*, 5 August 1999: 6.

^d "Cabinet Information Research Office To Launch Reconnaissance Satellites in FY03," *Sankei Shimbun*, 26 January 2002.

^e "LDP Proposal on Intelligence Satellites," LDP Web site.

^f "NASDA, *Joho Shushu Eisei de Junbishitsu wo Kaisetsu*" [NASDA Establishes Preparatory Office for Intelligence-Gathering Satellite], *Nikkan Kogyo Shimbun*, 15 December 1998: 5.

proceed with development of the satellites using indigenous technologies. That same day, NASDA upgraded the "Preparatory Office" to a "Research Office," and transferred 13 personnel from the ALOS project to the reconnaissance satellite program as NASDA "will apply ALOS technology" during construction, according to the industry newspaper *Nikkan Kogyo Shimbun*.^a Inevitably, as Tokyo's attention turned to reconnaissance satellites, ALOS construction was delayed by a number of years.

Nongovernment defense analysts began to speculate about the capabilities of future reconnaissance satellites built from ALOS technologies. Keiichi Nogi, a well-versed military affairs commentator writing for the defense journal *Gunji Kenkyu*, called ALOS the "parent satellite" of the reconnaissance satellite program and noted that "if the performance of the charge-coupled devices (CCDs) and optics is improved, achieving 1-m ground resolution at the original altitude [of 700 km] would not be impossible."^b Other Japanese media outlets also suggested ALOS technolo-

Tokyo originally scheduled the launch of all four satellites for mid- to late-2002 but, citing a delay in parts procurement, it postponed the launch until early 2003 for the first pair of satellites.

gies would be improved to provide greater resolution, with *Sankei Shimbun* reporting that the number of CCDs to be used in ALOS's PRISM sensor might be doubled, thereby making it possible to improve the resolution to 1.2 m.^c Regardless, excitement grew within the defense community as the program took shape.

Launch

Tokyo originally scheduled the launch of all four satellites for mid- to late-2002 but, citing a delay in parts procurement, it postponed the launch until early 2003 for the first pair of satellites and late summer 2003 for the second pair.^d On 28 March 2003, Japan successfully launched the first two indigenously produced reconnaissance satellites on its H-2A rocket from the Tanegashima Space Center.

The March launch placed into orbit one satellite with an optical system with approximately

a 1-m resolution and another with a SAR that reportedly had a resolution of 1–3 m. Most reports noted that 3 m was probably the best resolution possible, as the SAR satellite operated in the L-band with a frequency between 0.4 gigahertz and 1.5 gigahertz, accounting for the 3-m resolution.^e Sunohara quoted a Japanese imagery specialist who asserted that a 1-m resolution would be quite difficult with the L-band radar and that a 3-m resolution was more likely.

For better resolution, the satellite would have to use a higher frequency C-band or X-band radar at 8–9 gigahertz, which Sunohara suggested might be included in third-generation satellites after 2011.^f Most analysts noted, however, that while the SAR satellite produces only poorer-resolution monochrome images, it has a distinct advantage over an optical system because it can be used at night and during inclement weather.

^a "Seifu, Joho Shushu Eisei no Kokusan wo Kettei" [Government Decides On Domestic Development of Intelligence-Gathering Satellites], *Nikkan Kogyo Shimbun*, 2 April 1999: 2.

^b Keiichi Nogi, "Summing Up the Pluses and Minuses of Japan's Reconnaissance Satellite Development," *Gunji Kenkyu*, December 1998: 60–74.

^c Yoshihiko Ninagawa, "STA, NASDA Study Improved Satellite Monitoring Resolution," *Sankei Shimbun*, 20 September 1998: 1.

^d "Joho Shushu Eisei, Uchiage 15-nen ni Enki, Seifu Kettei, Buhin Chotatsu ga Okureru" [Government Decides To Postpone Launch of Intelligence-Gathering Satellites Until 2003, Supply of Parts Late], *Sankei Shimbun*, 14 June 2001: 2.

^e Yuta Sagara, "Peaceful Use Principle in Japan's Policy Crumbling," *Kyodo*, 6 March 2003.

^f Tsuyoshi Sunohara, *Tanjo Kokusan Supai Eisei: Dokuji Johomo to Nichibei Domei* [The Birth of an Indigenous Spy Satellite: Independent Intelligence Network and the Japan-US Alliance] (Nihon Keizai Shimbunsha, 2005), 208–209, 226.

The preponderance of the early imagery was reportedly taken of targets in North Korea, including nuclear facilities at Yongbyon and missile launch facilities at Musudan-ri.

The first satellites orbited the earth in a solar synchronous quasirevolution orbit at 400–600 km in altitude 15–20 times a day. (Sunohara, citing “multiple” sources, placed the orbit at 470 km.^a) It was popularly claimed that the two satellites were able to take an image of any place on earth at least once a day, a central goal of the program. With the March 2003 launch behind them, the Japanese scheduled the launch of the second pair—like the first, one equipped with an optical sensor and the other with SAR—for August. In addition, the government revealed it planned to launch two “reserve satellites” in 2006 and two second-generation satellites by early 2009. The second-generation optical satellites were to have a 0.5 m resolution.^b

The satellites launched in March began transmitting imagery in late May. The preponderance of the early imagery was reportedly taken of targets in North Korea, including nuclear facilities at Yongbyon and missile launch facilities at Musudan-ri. The

satellites were also said to have photographed WMD facilities in Russia, China, and the Middle East.^c In one reportedly successful use of the satellites, Tokyo captured imagery of a rail line 150 km north of Pyongyang, where a massive explosion took place on 22 April 2004 shortly after a train carrying Kim Chong-il home from China had passed by. Pyongyang initially explained that the accident was caused by contact of electrical wires with ammonium nitrate fertilizer loaded on a train at the station, but Japan's monthly *Gendai* interviewed an unnamed North Korean official who claimed that the blast had been an attempt to assassinate Kim: “The blast at Ryongchon was simply not an accident—it was a terrorist assassination attempt on the Dear Leader,” the official asserted.^d

Whatever the case, KCNA, the state-run television station in North Korea, reported that the explosion damaged buildings as far as 2 km from the epicenter, and caused extensive damage especially in a 1.5-km radius of the blast. After viewing the

imagery, Japanese officials determined that the damage was not as great as Pyongyang had let on, and they judged the damaged area to have a maximum radius of 1 km. Once Japanese policy makers—including Prime Minister Koizumi—viewed the photos and independent damage assessments, Tokyo concluded the North exaggerated the damage in a bid to gain more international aid.^e

The August launch was postponed until 29 November 2003. The launch was ill-fated, however, as the satellites were unable to reach orbit when a procedure to jettison one of the rocket's fuel tanks failed. The tank remained partially attached to the rocket. NASDA destroyed the rocket in flight to keep it and its cargo from crashing uncontrollably to the earth's surface.^f The failure, the first of the H-2A rocket after five successful launches, also set back Japan's growing space-launch program. Before the failure the Japan Aerospace Exploration Agency was scheduled to launch up to 17 satellites by 2007 on the H-2A and M-5 space launch vehicles. All of these launches would be significantly delayed, however.

The mishap greatly disappointed DA and other govern-

^a Tsuyoshi Sunohara, *Tanjo Kokusan Supai Eisei: Dokuji Johomo to Nichibei Domei* [The Birth of an Indigenous Spy Satellite: Independent Intelligence Network and the Japan-US Alliance] (Nihon Keizai Shimbunsha, 2005), 179.

^b “Japan To Launch Two ‘Spy’ Satellites in March, Start Full-Fledged Operations in July,” *Yomiuri Shimbun*, 6 January 2003.

^c “Japan's ‘Spy’ Satellites Start ‘Full-Fledged’ Photo Surveillance Over DPRK,” *Asahi Shimbun*, 6 September 2003.

^d “Koizumi's Grave and Kim Chong-il's Betrayal; Interview With North Korea's Diplomatic Source in Beijing; Pressure From Hu Jintao, which materialized in Japan-North Korea Summit,” *Gendai*, July 2004: 28–36.

^e “Protecting Japan Part III: Eyes in the Sky Vital for Security,” *Yomiuri Shimbun*, 8 June 2004.

^f “Rocket Failure a Double Setback,” *Asahi Shimbun*, 1 December 2003.

ment officials, who had planned to have four reconnaissance satellites available for robust coverage of potential trouble spots in Asia and elsewhere. But Japan still had two satellites in orbit, and it continued with plans to build and launch next-generation satellites as well.

As it was working on its rockets and sensors, the Japanese government was also developing a basic data relay capability. Had the technology been included in the satellite program as earlier proposals had suggested, the first-generation of reconnaissance satellites might have data-relay capabilities provided by geostationary satellites positioned as high as 22,000 miles or more. As it was, on 20 February 2003, as preparations were under way to send up the first satellites in March, the Japanese successfully tested the "Kodama" Data Relay Test Satellite (DRTS) to relay images of the Indian subcontinent and Sri Lanka taken by the Advanced Earth Observation Satellite (ADEOS-II) to the Tsukuba Space Center and the Earth Observation Center in Japan.^a

It is likely that by now the Japanese do have a relay capability for their reconnaissance satellites, possibly using the DRTS, although there has been no mention in Japanese media of the existence of such a capability associated with the recon-

As the satellites were being constructed, Japan built data reception stations.

naissance satellite program. As noted above, much of the technology used in the ALOS was applied to the reconnaissance satellites, and NEC's original ¥210-billion proposal included a data-relay satellite. MELCO most likely included a provision for one in its proposal, which had a similar price tag. With such a capability, Japanese analysts would have the ability to provide policy makers with analysis of near real-time imagery of areas as far as Central Asia, the Indian subcontinent, and perhaps the Middle East.

Ground Facilities

As the satellites were being constructed, Japan built data reception stations in the north in Tomakomai in Hokkaido and in the south at Akune, Kagoshima Prefecture. Each site has one receiving antenna—covered by a giant greenish-bluish dome—and a two-story building adjacent to it, as reported by local papers that provided pictures of the facilities.^b The main substation, which has two receiving antennas and a two-story building, is located north of Tokyo in Kitaura, Ibaraki Prefecture, and serves as a backup to the main control and analysis cen-

ter in Ichigaya, Tokyo.^c The construction of the facilities was completed in December 2001, more than a year ahead of the launch of the first pair of satellites.^d Another satellite reception station is located on the western side of Australia near Perth.

Imagery analysis is conducted in the Cabinet Satellite Intelligence Center (CSIC) of Cabinet Intelligence and Research Office (CIRO). Given CSIC's designation as a special "center," its director presumably has a rank about equal to the CIRO deputy director. The center's first director was a retired general, Masahiro Kunimi, who had previously served as the first head of the Defense Agency's DIH in 1997. He was called out of retirement to head CSIC because of his experience in intelligence matters.

When CSIC began operations in the summer of 2001, it had approximately 20 SDF personnel and 180 personnel from other ministries and agencies. Kunimi told *Sankei Shimbun* that approximately 300 people would eventually work for CSIC.^e An additional 80 would be needed to operate the four receiving centers, bringing the

^a "Eiseikan Tsushin Jikken ni Seiko" [Inter-Satellite Communications Experiment Successful], *Air World*, May 2003: 124.

^b A photo of the northern site can be viewed on the 27 November 2001 edition of *Tomamin*, a local news service provider in Hokkaido, available at <http://www.tomamin.co.jp/2001/tp011127.htm>.

^c "Joho Shushu Eisei Uchiage Junbi Tchakutchaku: 15nen Natsu ni Mazu 2ki" [Preparation for Intelligence Satellite Launch Proceeds Apace: First 2 Devices Set for Summer 2003], *Asagumo*, 2 August 2001: 1; and *Nihon Keizai Shimbun*, 29 July 2002.

^d *Yomiuri Shimbun*, 31 December 2001.

The expanded Directorate for Geospatial Intelligence would perform “three-dimensional map intelligence” in addition to imagery analysis.

total number to 380 personnel, but *Nihon Keizai Shimbun* questioned whether this would be enough for 24-hour operations.^a Hiroyuki Kishino, a career Ministry of Foreign Affairs official, was promoted to deputy director from his position as the first chief of the Imagery Analysis Department on 5 August 2003 as the satellites were becoming operational.^b (In an indication of CSIC's high-profile, following his two years' service there Kishino was given the choice position of minister to Britain in 2004, and he was promoted to Envoy Extraordinary and Minister Plenipotentiary to Britain in early 2005.^c)

CSIC's five-story “core center,” which manages and operates the satellites, was constructed on the north side of the Defense Ministry headquarters^d in Ichigaya, Tokyo, where the DIH is also located. Indeed, a Japanese-language sign adja-

cent to the back gate of the Defense Ministry headquarters identifies the incongruously deep-silver building rising above the walls of the compound as the Cabinet Satellite Intelligence Center. The defense daily *Asagumo* reported that the facility was specially shielded to protect it from eavesdropping on electromagnetic signals emanating from the building.^e

The DIH Imagery Directorate was created in 1997 by the merger of the “Central Geography Unit” of the GSDF with the satellite imagery analysis divisions of the other SDF branches. When it was first established, analysts worked mainly with imagery purchased from US companies, but by 1997 it was “rumored” that Japan would “eventually receive its own reconnaissance satellites,” according to *Sentaku*.^f The Imagery Directorate was expanded to a “Directorate for Geospatial Intelligence,” with 40 additional imagery analysts in April 2003, bringing the

total number of imagery analysts there to 160. The number of personnel devoted to imagery analysis—civilian and uniformed—rose to 321 by mid-2004.^g

The expanded Directorate for Geospatial Intelligence would perform “three-dimensional map intelligence” in addition to imagery analysis, in the words of defense analyst Buntaro Kuroi.^h The significance of this step should not be overlooked, as three-dimensional imagery would be a necessary requirement for developing detailed maps of terrain features, a prerequisite for terrain-contour mapping technology in guidance systems for cruise missiles and other precision-guided weapons.

To support IMINT operations, the DA in March 2001 inaugurated the Imagery Intelligence Support System (called the *gazo joho shien shisutemu*).ⁱ According to the Defense Research Center's Isao Ishizuka, this system provides reconnaissance photographs from IKONOS satellites (owned by Space Image) with resolution as sharp as 82 cm to imagery analysts.^j Construction began on the system in 1997 with a projected cost of ¥16.1 billion.

^e Interview with Masahiro Kunimi, “*Joho Shushu Eisei, Uchiage 15-nen ni Enki, Seifu Kettei, Buhin Chotatsu ga Okureru*” [Government Decides To Postpone Launch of Intelligence-Gathering Satellites Until 2003, Supply of Parts Late], *Sankei Shimbun*, 14 June 14, 2001: 2.

^a “Government To Launch Monitoring Satellites in 2003 To Bolster Crisis Management,” *Nihon Keizai Shimbun*, 29 July 2002.

^b “*Naikaku (Jinji)*” [PMOR [Personnel]], *Nihon Keizai Shimbun*, 5 August 2003: 4.

^c “Japan Names Omori as Ambassador To Oman,” *Jiji*, 28 January 2005.

^d The Defense Agency was upgraded to a ministry in 2007.

^e “*Joho Shushu Eisei Uchiage Junbi Tchakutchaku: 15nen Natsu ni Mazu 2ki*” [Preparation for Intelligence Satellite Launch Proceeds Apace: First 2 Devices Set for Summer 2003], *Asagumo*, 2 August 2001: 1; Some Japanese internet mapping services available on the Internet helpfully label the building too: Mapion.co.jp labels the building directly to the north of Defense Ministry Headquarters as “*Naikakufu Joho Senta*” [Cabinet Satellite Center].

^f “Defense Agency Intelligence Headquarters,” *Sentaku*, May 1997: 126–29.

^g “Larger Staff Set for Analyzing Information Satellite Data,” *Yomiuri Shimbun*, 16 July 1999.

^h Buntaro Kuroi, “Special Project: What Are Japan's Foreign Intelligence Capabilities Now? (Part 2),” *Gunji Kenkyu*, November 2005: 232–41.

ⁱ http://jda-clearing.jda.go.jp/hakusho_data/2003/2003/html/15311300.html

Once operational, the system helped to supply satellite imagery acquired by Quickbird IKONOS commercial satellites, and it reportedly connects CSIC and the Directorate for Geospatial Intelligence at DIH via high-capacity data cable.^a Japan also orders imagery from the commercial imaging satellites Radarsat, Landsat, and Spot.^b If the system can be used with commercial satellite imagery, one can reasonably suppose that it can be used with imagery obtained from Japan's reconnaissance satellites as well.

Follow-on and Future Intelligence Satellites

Japan successfully launched a third satellite on 10 September 2006 and a fourth one five months later. According to one industry newspaper in late July 2000, construction of these additional satellites had been planned as a "contingency" for a launch failure during either of the first launches in 2003—a plan that proved prescient.^c

^j Isao Ishizuka, "Joho Shushu Eisei Seiko no Joken" [Requirements for Successful Information-Collection Satellites], in *DRC Nenpo 1999*, available at www.drc-jpn.org/AR3-J/mokuji-j.htm.

^a Kuroi, 232–41.

^b See comprehensive list of satellites used by Japanese ministries and agencies on Cabinet Web site, www8.cao.go.jp/cstp/tyousaikai/cosmo/haihu03/siryou3-5.pdf.

^c "Seifu, Rainendo Kara Joho Shushu Eisei no Kokeiki Keikaku ni Chakushu" [Government Begins Planning Successor Intelligence-Gathering Satellites From Next Fiscal Year], *Nikkan Kogyo Shim-bun*, 28 July 2000": 2.

Once the first-generation satellites were completed, Japan began development of next-generation reconnaissance satellites.

While still considered first-generation satellites, these back-up satellites apparently included improvements over the two already in orbit. The CCDs employed on the back-up optical satellite had been scheduled to be upgraded by 2005 from 8-bit to 11-bit radiometric resolution, according to Sunohara, increasing the grey values (and therefore the image quality) in the black-and-white images from 256 to 2048. The optical satellite would be capable of taking 1-m black-and-white images and 5-m color images, and have more powerful "pointing" or slewing capabilities. The SAR satellite was also reported to have a 1- to 3-m resolution, although because it was to continue to employ L-band radar, its resolution is likely limited to be around 3 m as noted previously.^d

Once the first-generation satellites were completed, Japan began development of next-generation reconnaissance satellites. Plans to build these satellites were officially approved on 13 June 2001, when the "Intelligence-Gathering Satellite Promotion Committee" headed by Chief Cabinet Secretary Yasuo Fukuda approved the indigenous development of optical

technology capable of a 50-cm resolution. These second-generation satellites were scheduled to be ready for launch by early 2009.^e

Second- and later-generation satellites to be launched after 2009 were to have improved, shorter solar panels to allow for greater maneuverability. The satellites would also be equipped with improved reaction wheels to allow slewing along all three axes. The reaction wheels, essentially weighted spheres that cause the satellite to turn when they spin in a particular direction, are part of the attitude control system that adjusts the satellite's position for precision targeting. While the first-generation satellites are equipped with reaction wheels limited to slewing on one axis, the next-generation satellites were designed to be able to slew along all three axes, thereby expanding the number of potential surface targets within range at any given moment in orbit. The satellites were also to be lighter than the 2-ton first-generation satellites, with an expected weight of around 1.2 tons.^f

One question for speculation is whether Japan will ulti-

^d Tsuyoshi Sunohara, *Tanjo Kokusan Supai Eisei: Dokuji Johomo to Nichibei Domei* [The Birth of an Indigenous Spy Satellite: Independent Intelligence Network and the Japan-US Alliance], *Nihon Keizai Shimbunsha*, 2005, 225.

^e "Seifu, Jisedai Joho Eisei, Noryoku wo Ohava Kojo" [Government To Improve Capability of Next-Generation Intelligence-Gathering Satellite], *Nihon Keizai Shimbun*, 13 June 2000 (evening edition): 3.

^f Sunohara, 226–27.

Until recently, one significant impediment to further development of space-based systems was the so-called Peaceful Use of Space policy.

mately build other types of satellites, such as SIGINT, MASINT, or launch-detection satellites. One vocal proponent of additional satellite capabilities is Toshiyuki Shikata, a retired GSDF lieutenant general who speaks and writes prolifically on a wide range of security-related matters and who has consistently called for the development of a wide variety of satellites. He told the *Yomiuri Shimbun* in 2006, for example: "This country should have at least eight satellites to be able to take photos" of missile bases and other sites "twice a day."^a He has made similar calls in his monthly column in *Securitarian*,^b and he has called for the construction of a satellite to intercept communications and for a launch detection satellite.^c Shikata has significant access to policy makers—he addressed the Expert Panel on Space Development and Utilization (an advisory panel to the Prime Minister) in January 2002, and he has served as a consultant to Tokyo Governor

Shintaro Ishihara on crisis management.

Until recently, one significant impediment to further development of space-based systems was the so-called Peaceful Use of Space policy. This policy referred to a resolution passed by the Diet in May 1969 clarifying Japan's space policy. It stated that "Japan...will proceed with space development as long as it is for peaceful objectives."^d This was generally seen as precluding the Defense Agency or the Self-Defense Forces from using space-based platforms until 1983, when the DA used NTT's "test" communications satellite CS-2/Sakura-2 for communications between the DA headquarters and units on Iwo Jima. This created a public stir, however, because this was the first time the Defense Agency had used a space-based system for defense-related purposes. In 1985, the Maritime Self Defense Force used the 1983 precedent as grounds for a request to use the US Navy's communications satellite Fleetsat.^e The Cabinet ruled that year that such a use was "generalized" and therefore did not violate the "peaceful objectives" of the resolution.^f

The SDF could use satellites as long as the satellites also served a general commercial or scientific purpose as well.

The "peaceful use" policy was less of an issue when the reconnaissance satellite program was established in the late 1990s because of overwhelming public concern following the Taepo Dong missile launch and other aggressive actions by Pyongyang. The DA merely continued to argue that the reconnaissance satellites' functions are "recognized as generalized," and therefore intelligence gathered by the satellites could be used by the SDF.^g

To remove any lingering questions about the legality of the use of space, the ruling LDP in June 2006 drafted legislation that would specifically support Japanese use of space-based systems for national security purposes. Kyodo reported at the time that passage of the bill would "enable the development of high-definition spy satellites and of a satellite capable of detecting the firing of ballistic missiles," and establish a "Space Strategy Headquarters" in the Cabinet Secretariat and a Minister for Space Development to coordinate space development strategies among the various government agencies.^h In addition to clearing up potential legal issues related to Japan's use of space, the bill's proposed creation of a central

^a Tetsuo Hidaka and Koichi Yasuda, "Better Spy Satellite System Needed: Reliance On US Intelligence On Missile Launch Shows Need For Improvement," *Yomiuri Shimbun*, 31 July 2006.

^b Toshiyuki Shikata, "*Shinsorikantei ni Kitai Suru Mono: Taisetsu na Joho Kozo no Kakuritsu to Kunren*" [Expectations for the New PMOR: Ensurance and Practice for an Important Information Structure], *Securitarian*, April 2002: 50–51.

^c Quoted in "Japan's First Intelligence Satellites Will Be Able to Capture Images of 'North Korea' Only," *Shukan Bunshun*, 19 December 2002: 152–55.

^d Quoted in Tamama, Tetsuo, "*Nihon no Uchu Seisaku to Anzen Hoshō no Setten*" [Points in Common Between Japan's Space Policy and National Security], *Boei Gijutsu Janaru*, June 2002: 23.

^e Yuta Sagara, "FOCUS: 'Peaceful Use Principle' in Japan's Policy Crumbling," Kyodo News Service, 6 March 2003.

^f Tamama, 24.

^g Tamama, 25.

^h "Panel Drafts Outline of Bill To OK Military Use of Space," 2 June 2006.

organization and ministerial post to coordinate space policy pointed to official intentions to pursue a greater variety of space-related projects, which certainly included additional satellites related to intelligence collection and national defense.

The bill had broad bipartisan support, as all three major parties—the governing LDP, its coalition partner the New Komeito Party, and opposition Democratic Party of Japan—supported the legislation in the Diet in early 2008. The bill became law—the *uchu kihonho* or “Space Basic Law”—in mid-2008, after it was passed by both houses of Japan's Diet.

Of particular interest is Article 3, which states that Japan's continued development of space is necessary for its own “national security” as well as the preservation of international community's “peace and security.” The new law thus sanctioned the use of space-based systems specifically for national security purposes, opening the door for the legal development of a wider range of intelligence-related satellites.

Yasuaki Hashimoto, writing for the Defense Ministry-affiliated National Institute of Defense Studies, noted that the enactment of the law indicated that Tokyo was moving away from the use of space strictly for “peaceful purposes equal to nonmilitary purposes” to a “nonaggression” policy of the use of space. In other words, Tokyo can now legally develop the full range of space-based

Tokyo chose to develop an early warning satellite as its next major satellite program as North Korea's potentially nuclear-tipped intermediate-range missiles pose the clearest threat to the Japanese archipelago.

platforms for national security purposes such as “early warning satellites, communications satellites, data relay satellites,” and SIGINT satellites in addition to reconnaissance satellites, according to Hashimoto.

While the enactment of this law makes the use of space-based platforms for national security purposes legal, there are multiple hurdles to their indigenous development and operation, not least of which is cost. But with this law, Tokyo “will be able to examine the merits and demerits of various national security systems” that operate in space, according to Hashimoto.^a

Following a public debate on the “merits” and “demerits” of future satellite systems in the spring of 2009, the Japanese government in June approved a panel recommendation that included the launch of an additional reconnaissance satellite and the development of sensors to be employed on a future early warning satellite.^b The previously planned launch of a reconnaissance satellite sometime in 2011 or later would bring the number of active reconnaissance satellites to

four—considered to be the minimum necessary for a fully operational reconnaissance satellite constellation.

Tokyo chose to develop an early warning satellite as its next major satellite program as North Korea's potentially nuclear-tipped intermediate-range missiles pose the clearest threat to the Japanese archipelago. The satellite is slated to be integrated into Japan's national missile defense system, which has gained ever greater importance after North Korea's successive missile and nuclear tests in the 1990s and 2000s.

Over the past three decades Japan has gradually gained confidence in developing, launching, and employing an increasing variety of space-based systems for national security purposes. The remaining legal hurdles have been eliminated, and Japan is now set to develop a launch-detection satellite for use in an increasingly robust national missile defense system even as it continues to employ more sophisticated reconnaissance satellites. While the costs of other possible future satellite programs might prove prohibitive, Tokyo will no doubt continue to examine a range of possible options as it looks to expand its space-based capabilities.

❖ ❖ ❖

^a Yasuaki Hashimoto, “Enactment of the Basic Space Law: Japan's Space Security Policy,” *Briefing Memo*, National Institute of Defense Studies, 27 June 2008.

^b Shiro Namekata, “Space Plan to Double Satellite Launches,” *Asahi Shimbun Online*, 3 June 2009.

The National Cryptologic Museum Library

Eugene Becker

Last year, a widely published German technical author, Klaus Schmeh, e-mailed the library of the National Cryptologic Museum from his home in Gelsenkirchen, Germany. He needed information for an article on the Kryha cipher machine, a device popular in the 1920s. Librarian Rene Stein found articles about the machine but, even more useful, she found unpublished correspondence between Alexander von Kryha, the machine's inventor, and a German who had invested in the machine. She photocopied the files and sent them to Schmeh, who used them for a talk at the 2009 Cryptologic History Symposium and for an article in *Cryptologia* magazine. Thus the museum advanced knowledge of the history of cryptology.

When scholar Chris Christensen needed information on the US Navy cryptology correspondence courses for his article on William Wray, an early NSA mathematician, he contacted the museum library. From its collection of Special Research Histories, he obtained copies of the courses produced by the Navy between 1937 and 1946.

In researching his book on the vocoder, which played a role in speech scrambling, David Tompkins met at the NSA Museum with Frank Gentges, a vocoder consultant during the Cold War. Gentges and his partner, the late David Coulter, had contributed their collection of speech cryptodevices to the museum. Gentges took Tompkins on a Cold War "Secure Voice" tour, explaining the HY-2 vocoder and the STU-II and STU-III phone systems. (The museum's audio history of secure voice was also helpful.) Because Tompkins was primarily interested in the replica of the extremely secure World War II SIGSALY voice encryption system, he and Gentges spent most of the day in the library going through declassified SIGSALY files. The librarian provided technical manuals, Signal Corps logs, and noted cryptologic historian David Kahn's notes for a SIGSALY article in the IEEE publication *Spectrum*), as well as photos of the SIGSALY terminals. All of this provided much-needed backbone for the SIGSALY chapter of his book.

In dozens of ways like these, the museum and its library, with the support of the National Cryptologic Museum Foundation, is becoming a world center of historical intelligence research. Daily, the museum responds to historians seeking answers to questions in intelligence history, primarily cryptology. It has expanded its original focus of displaying cryptologic artifacts to educating the public about cryptology and its vital role in national defense.

The museum grew out of the US Army's collection of captured Axis cryptographic equipment and the Army Signal Intelligence Service's Research and Development Museum of older cryptographic devices and books. At first these were merely displayed

All statements of fact, opinion, or analysis expressed in this article are those of the author. Nothing in the article should be construed as asserting or implying US government endorsement of its factual statements and interpretations.

in cases in the halls of NSA. When around 1990, the history-minded Vice Admiral William O. Studeman, then the director of NSA, established the Center for Cryptologic History and NSA acquired a motel adjacent its headquarters, space for a real museum became available. Earl J. "Jerry" Coates and another NSA employee, Jack E. Ingram, helped by an NSA graphics team and construction workers, converted one of the buildings into a museum and library. On Coates' retirement, Ingram took over as director. The doors were opened on 15 July 1993 to NSA employees, then, in December, to the public.

The museum, whose story has been well told by Ingram in "The Story of the National Cryptologic Museum," *Studies in Intelligence* 47, No. 3 (2003), displays some of America's most valuable cryptologic artifacts. Among the most dramatic is the museum's huge bombe—the World War II electromechanical device that tested German Enigma-machine intercepts with possible cribs to see if any produced a valid Enigma key so German messages could be read. Visitors queue up at the museum's Enigma cipher machine—perhaps the most famous in the world because of its use by the German armed forces and its solution by the Allies. They stare at the museum's polished brass Hebern cipher machine—the first to utilize the rotor principle, which became the world's most used cryptosystem, at the Civil War cipher table mounted on a cylinder, at the replica of a World War I intercept station. The museum has on display the first printed book on cryptology—the 1518 *Polygraphiae libri sex* of the Benedictine monk and mystic Johannes Trithemius.

For those who pursue that history, the museum library has proven to be a mother lode of valuable resources. Perhaps first among these are the declassified oral histories of such cryptologic pioneers as Frank Rowlett, the "foreman" of the team that cracked the Japanese PURPLE diplomatic cipher machine and who ran a major Army codebreaking element in World War II. He later became an assistant to successive directors and his reminiscences are exceptionally useful and interesting because they include much about agency personalities. Other gems consist of the British technical studies of the breaking of the German Enigma and other cipher machines and some of the Allied TICOM studies—the American-British reports, based on captured documents and postwar interrogations, of Axis code-making and code-breaking. These provide a remarkable source for a rounded history of cryptology in World War II.

The core of the library book collection was gathered in the years before World War II when resources for cryptologic study were scarce. Under the direction of William F. Friedman, Chief of the Army's Special Intelligence Service, books were collected wherever they could be found regardless of age or language. Thus the library has many rare and hard-to-find items that were used for study. In his book *The Story of Magic*, Frank Rowlett, the first junior cryptanalyst hired by Friedman, tells how his cryptologic training began. On his first day of work, Rowlett watched as Friedman removed four books from a vault; two were in German and two were in French. Rowlett was only able to read German so he began with F.W. Kasiski's *Die Geheimschriften und die Dechiffirkunst* and later went on to Andreas Figl's *Systeme des Chiffrierens*. The library holds both of these famous books as well early cryptanalytic training materials such as *Elements of Cryptanalysis* (Training Pamphlet No. 3), and Friedman and Lambros Callimahos's three-volume *Military Cryptanalytics*.

In addition to these, the library's book collection contains 6,000 books, covering all aspects of cryptology from technical manuals and how-to books on codes and ciphers to histories that describe the development and impact of code-making and codebreaking as well as their use by spies and foreign governments. The library also has one of the largest collections of commercial code books. These codebooks were used by businesses to

reduce the cost of cable communications by substituting short code groups for words and phrases in telegrams. Modern communications and encryption methods have made them obsolete and mainly of historical interest.

The library is also home to a collection of hundreds of scientific articles on communications, computer security, electronic equipment, key management, mathematics, intelligence, and cryptologic history collected during the 1970's and 80's. Because they predate articles covered in full-text databases, they are difficult or impossible to find in one place elsewhere. The collection is called the Disher Collection, named for its compiler.

In addition to books and articles, the library houses a number of historical declassified documents: special research histories, Japanese "Red" messages, Venona messages, MASK messages, and ISCOT messages. Special research histories or SRHs are of naval, military, intelligence, diplomatic, and technical studies prepared largely by the US military utilizing decoded and translated enemy communications. The bulk of the material deals with World War II, though some studies cover topics ranging from World War I to the attack on USS Liberty in 1967. These documents describe military operations, intelligence organizations and activities, communications security and intercepts, code breaking, codes, and ciphers.

During the 1930s, the Japanese enciphered their diplomatic messages using a machine that US intelligence named "Red." The library holds 3,338 decrypted messages dating from November 1934 to October 1938.

The Signals Intelligence Service began a secret program in February 1943, later code-named VENONA. The mission of this small program was to examine and exploit Soviet diplomatic communications, but after the program began, the message traffic included espionage efforts as well. The first of these messages were declassified and released in July 1995. Over the course of five more releases, all of the approximately 3,000 VENONA translations were made public. The library holds copies of all of the released VENONA messages.¹

The British Government MASK messages are thousands of secret COMINTERN (Communist International) messages between various capital cities and Moscow from 1934 to 1937, which give a wealth of detail about Moscow's control of the various national Communist parties (including the American Communist Party). ISCOT was the code-name for the British program to intercept and decrypt clandestine radio messages between Moscow and COMINTERN (Communist International) outstations in German-occupied Europe and in China from 1943 to 1945. The library holds a complete set of both the MASK and ISCOT messages.

Early this year, the Museum Foundation purchased a collection of children's books on cryptology for the library's younger researchers. Among them are books on Native American Code Talkers and codes and ciphers.

An event that moved the museum to the forefront of historical intelligence studies was the donation by David Kahn, the author of *The Codebreakers* and a 1995 NSA scholar in residence, of his considerable collection of books, articles, interview notes, and docu-

¹ See <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/venona-soviet-espionage-and-the-american-response-1939-1957/venona.htm>

ments on cryptology to the library. This enormously expanded the range and value of the holdings of the library. Of David Kahn's several careers—historian, journalist, author—it is as a collector and researcher that he has made perhaps his most important contribution to the esoteric field of cryptology. Kahn began buying books on the subject as a young man, starting with readily available trade works and soon adding rare books such as Blaise de Vigenère's 1587 *Traicté des Chiffres* and Johannes Frederici's 1684 *Cryptographia* and journal articles on cryptology, as well as letters and interviews he had gathered while writing his books. Realizing that his two sons were not interested in cryptology or his by-then vast and valuable collection, he decided to donate his books to the National Cryptologic Museum through the National Cryptologic Museum Foundation.

Among the most interesting items in the Kahn Collection are the papers of an early 20th century American cryptanalyst, Colonel Parker Hitt, and some papers of Dr. Lester Hill, who first proposed polyalphabetic algebraic ciphers—though, regrettably, nothing about the cipher machine that he patented for that system. There are also some very rare items such as photocopies of a historical study of French cryptology from about the 1880s to a little past the end of World War I, based on documents that no longer exist and a personal memoir by Givierge, telling his life story as a leading figure in French cryptology and giving his colorful impressions of personalities in that field.

All of Kahn's books have been cataloged and are now available for reading and research in the library. However, because of their vast number, the papers are still being processed. Recently the library began to digitize Kahn's very valuable notes from correspondence and interviews conducted while researching his books and articles. Among these is an interview with retired Captain A. J. Baker-Cresswell, commander of the Royal Navy destroyer *Bulldog* that had captured a German Enigma machine and its book of settings from the U-110. The detailed story of the capture would never have come to light but for the interview. Yet to come from Kahn are his collection of photographs of cryptologic and intelligence personnel, equipment, and places. Such illustrations will enhance the value of the museum to television producers and internet users.

The library was further enriched last spring by the acquisition of the personal collection of the late Louis Kruh, a nationally known collector and colleague of Kahn. Among the 60 boxes and three file cabinets is a correspondence addressed to Alexander Hamilton in 1796 prepared in a shorthand system of concealment. Later, in May, the library received the archive of Chaocipher material from the estate of inventor John Byrne. Chaocipher is the name Byrne gave to a cipher system he invented in 1918. The Chaocipher is on a list of infamous unsolved codes and ciphers, and it remains both a cryptologic curiosity and legend—one of today's premier unsolved cipher challenges.

Information about the museum's hours, its services, and contact telephone numbers can be found on the Internet at http://www.nsa.gov/about/cryptologic_heritage/museum/ and at <http://www.cryptologicfoundation.org>.

**The idea for this article originated with Dr. David Kahn. I also wish to acknowledge the helpful assistance of the museum library staff in its preparation.*



Why Intelligence Fails: Lessons from the Iranian Revolution and the Iraq War

Robert Jervis, Ithaca, NY: Cornell University Press, 2010. 238 pp, endnotes, and index.

Torrey Froscher

Can intelligence failure be avoided? Robert Jervis begins his study of two well-known cases, the 1979 Iranian Revolution and the 2003 Iraq War, by noting that the question is more complicated than it may first appear. The most common understanding is that “intelligence failure” occurs when, as Jervis puts it, “there is a mismatch between the estimates and what later information reveals.” But intelligence has no crystal ball, and no one should be surprised that assessments of things that are hidden and projections about the future sometimes miss the mark. In this sense, intelligence failures are indeed inevitable, whatever steps might be taken to try to avoid them. A more interesting question is whether analysts succeed or fail in making the most of information available to them. In two case studies, Jervis identifies key reasons why analysis fell short while also demonstrating that the most common explanations for these failures are wrong. His conclusion in both cases is that if analysts had done their best, i.e., “succeeded,” they would have reached many of the same judgments, albeit with a reduced degree of certainty.

Jervis’s study of why the CIA failed to anticipate the revolution that deposed the shah of Iran was written in 1979 and only recently declassified. Despite the intervening years, its insights remain fresh and relevant to today’s intelligence challenges. The fundamental reason for the failure, according to Jervis, was that judgments were based mostly on their inherent plausibility and alternative possibilities were not seriously considered. The shah had defied previous predictions of his demise and was expected to do so again. Analysts didn’t understand the nature of the opposition, particularly the religious dimension—which was dismissed as an anachronism. CIA believed that the shah would crack down if his rule was threatened, apparently not taking into account that this expectation was at odds with US advice that he should continue to pursue democracy and reform. Most important, analysts did not recognize that this key belief was not “disconfirmable”—that is, it could not be shown to be false until the shah had already been deposed.

Jervis’s Iraq study is less comprehensive and acknowledges some missing pieces, but he finds the basic mechanism of failure to be similar to that in the Iran case. Analysts had developed plausible inferences about what was happening in Iraq that guided their interpretation of the relatively few specific bits of

All statements of fact, opinion, or analysis expressed in this article are those of the author. Nothing in the article should be construed as asserting or implying US government endorsement of its factual statements and interpretations.

information that were available. It made no sense that Saddam Hussein would continue to obstruct inspections and risk a US attack if he had nothing to hide. This general presumption, rather than the specific evidence being reported, was the basis for the judgment that Iraq had WMD. Analysts assumed that they were seeing only a small portion of Iraq's effort because of Saddam's well-developed program of denial and deception. As in the case of Iran, they did not take into account that there was no way to determine if this core belief was true or false.

Jervis does not discount or excuse the specific errors of analysis and sourcing that received most of the attention in the official postmortems of the Iraq failure. However, he notes that critics invariably leave the impression that had these mistakes been avoided, the Intelligence Community could have reached the correct judgments about Iraq's weapons. In fact, given the information available, the least damning verdict that might have been offered was that there was no solid evidence of continuing programs. Any claim that Saddam had ended his WMD programs would have been seen as highly implausible, even if there was evidence to support it. As Jervis notes, critics do not wish to acknowledge this because there is a presumption that "bad outcomes are explained by bad processes." It is more comforting to believe that if the right reforms and organizational changes are made, future failures can be avoided.

This is not to say that the IC could not do a better job. Jervis's main criticism is the failure to apply what he calls "social science methods," which might be thought of more generally as critical thinking skills. Analysts tend to look for (and find) what they expect to see. They do not think enough about the potential significance of things that are not seen ("dogs that do not bark"). Most important, they do not make an effort to consciously articulate the beliefs that guide their thinking and consider what evidence should be available if they were true, or what it would take to disprove them. Facts do not speak for themselves but inevitably are seen in a framework of understanding and belief—whether that framework is recognized or not. Analysts rarely think about that contextual framework or what it would take to make them change their views.

The perils of such thinking traps are not a new concern to intelligence analysts. Indeed, Jervis begins his book with a quotation from Sherman Kent, one of the founding fathers of the profession, who observed that intelligence officers are supposed to be distinguished from others by their "training in the techniques of guarding against their own intellectual frailties." However, as Jervis also notes, many aspects of routine practice and culture in the IC do not encourage attention to this problem. Intelligence products tend to focus on the latest events, reporting the facts with little reflection or interpretation. Conclusions are too often merely assertions without explanation or support beyond their inherent plausibility. Although it has all the necessary raw materials, the IC has never developed an effective peer review process for analytic production. "Coordination" tends to focus on superficial language changes rather than a serious examination and debate about fundamental premises.

In the aftermath of post-9/11 and Iraq war critiques, the IC has placed renewed emphasis on enhancing collaboration and improving the quality of analysis. In accordance with the Intelligence Reform and Terrorism Prevention Act of

2004, analysts are applying new guidelines designed to improve characterization of sourcing, clarify assumptions, and encourage consideration of alternative possibilities. Jervis does not assess the merits of these initiatives specifically, but he clearly believes that the prospects for improvement are limited by the fundamentally intractable nature of the problem. He suggests that better analysis requires a robust examination of how judgments are reached and a sharp focus on underlying factors that are often overlooked. Why do specific judgments seem plausible and are there alternative possibilities? Could the information advanced in support of a particular thesis be explained by other factors? Are we misunderstanding the impact of political and historical factors unique to the issue or region? He recommends supplementing this program of self-scrutiny with substantively focused peer review and extensive study of a range of historical cases.

Even as Jervis explains the challenge of overcoming congenital intelligence limitations, he also warns that better analysis in the sense he suggests might not be particularly welcomed by consumers. By their nature, decision makers need to have conviction and are focused on selling and implementing their policies. Intelligence analysis that gives more scope to alternative interpretations of the evidence is not likely to be well received. Jervis offers a colorful quote from John Maynard Keynes to illustrate the point: "There is nothing a Government hates more than to be well-informed; for it makes the process of arriving at decisions much more complicated and difficult." Perhaps the best contribution intelligence can offer, Jervis suggests, is a nuanced evaluation of alternative possibilities and the key factors at work. Ideally, this could raise the level of understanding and debate before policymakers make decisions. At the same time, however, they are unlikely to pay attention unless they are already seized with the issue, so there is a narrow window for such inputs.

There is much more of value to the intelligence professional in this concise but densely packed volume, including a discussion of the complexities of politicization, specific insights on other historical cases of interest, and detailed endnotes that constitute a survey of relevant literature. It is essential reading that gets beyond the conventional wisdom about intelligence failure and provides nuanced insight into what Jervis describes as the "insoluble dilemmas of intelligence and policymaking."



A Fiery Peace in a Cold War: Bernard Schriever and the Ultimate Weapon

Neil Sheehan. New York: Random House, 2009. 534 pp., index.

Matthew P.

If the American public was polled to identify the iconic milestones of the Cold War, the 18 August 1960 launch of the US rocket Discoverer XIV probably would not make the list. The launch was a spectacular visual show, but so were most launches of the time. Only a few were in position to appreciate the significance of that particular launch. The rocket was a Thor intermediate range ballistic missile (IRBM), a product of the US Air Research and Development Command under the direction of Air Force General Bernard Schriever. Behind the IRBM and intercontinental ballistic missile (ICBM) programs was achievement of a nuclear strike capability superior to the Soviet Union's. However, Discoverer XIV was not armed with a warhead; it carried a camera.

What shot into space that day was the first deployment of the CIA's CORONA satellite, which in that one mission obtained more overhead images of the Soviet Union than were acquired from all the 24 U-2 flights over Russia that had taken place until then. Intelligence from the CORONA program would settle the question of the so-called missile gap and inform US policymakers of Soviet missile development for a decade thereafter. Ironically, today we can look back and measure the successes of the IRBM and ICBM programs with considerations that do not include their primary function, the delivery of weapons. Among their contributions to keeping the peace was their use in carrying up to space the instruments that gathered the sort of intelligence whose absence had been behind the urgency of their development.

In *A Fiery Peace in a Cold War* Neil Sheehan tells the story of the US missile arsenal in a way that intends to "convey the essence of the Cold War and the Soviet-American arms race through the human story of the men caught up in [it]" (481). Sheehan paints a rather "American" portrait of the participants, who often had immigrant or otherwise humble backgrounds (including the German-born Schriever) and many of whom were educated in West-coast university technology programs. This American story also reveals the brazenness and savvy behavior of junior officers, such as Schriever and the "Junior Indians," so called because they sat in the seats around the side of the room while their superiors were at the table. Schriever and the Junior Indians showed astute knowledge of the system as part of a 1948 effort to separate their R&D from the Air Force's massive Air Material Command (AMC), gaining flexibility and a degree of auton-

All statements of fact, opinion, or analysis expressed in this article are those of the author. Nothing in the article should be construed as asserting or implying US government endorsement of its factual statements and interpretations.

omy for their work. Also part of this American story is the postwar technological and commercial production boom in the public and private sectors.

Sheehan succeeds in telling a human story, although mainly in the professional lives of the characters. Sheehan doesn't explain if this was his preference or an indication that these men did not have time for their families, but this reader came away sensing the latter was the case. And oddly, among the other personalities such as Air Force General Henry "Hap" Arnold, AMC's Curtis Lemay, and lesser-known scientists and junior officers, Schriever's human side seems flat in comparison. Readers of Sheehan's *A Bright Shining Lie: John Paul Vann and America in Vietnam* (1988) should not expect the dynamism and contradictions that made John Paul Vann a memorable biographic subject. In this case the narrative is driven not by Schriever as an enigma but by Schriever as an exemplar of the anxieties and gambits of a Cold War drama.

Sheehan deals with intelligence in two ways. First, he discusses some of the early atomic espionage cases against the United States. Although these cases are mostly well-known to Cold War scholars, Sheehan's extensive use of interviews led to some fresh insights. One example is revelation of the family circumstances of Theodore Hall, a Soviet spy in Los Alamos. Hall's brother, Air Force Col. Edward Hall, was a colleague of Schriever's and a recurring figure in the book and apparently was unaware of Theodore's spying until the declassified VENONA intercepts of Russian communications were revealed in 1996.

Second, Sheehan highlights the deliberate use of intelligence in justifying ambitious and expensive weapons programs. Fear and lack of hard evidence on Soviet missile progress before the mid-1950s led the United States to operate in urgency against an opponent presumed to be ahead in the race. Yet for years the Intelligence Community had little evidence of what the Soviets were actually doing. There was the unscrupulous as well. In one case an Air Force colonel faked an intelligence report on Soviet rocketry to ward off a budget cut. In another case, a senior officer made assertions about a Soviet ICBM program that, apparently unknown to him, U-2 imagery refuted.

Sheehan recounts Schriever's encounter, after a White House meeting, with Director of Central Intelligence Allen Dulles and Vice President Richard Nixon. Schriever's team had just finished giving President Eisenhower a briefing in which, in order to win presidential support for a missile program, it had depicted aggressive Soviet ICBM development efforts. After the presentation, Dulles, in the presence of Nixon, subjected Schriever's team to what one of the Air Force attendees called "cops and robbers questions" on the intelligence basis for their briefing. The team struggled to provide answers because their evidence on the Soviet ICBM program was admittedly thin.

Observers of the defense and intelligence contracting businesses will see roots of now-familiar realities. One is the imperfectly aligned interest between a contractor's financial bottom line and the needs of national service. Schriever illustrates what he calls greedy and persistent private-industry proposals during the period for a five-engine, 220-ton ICBM, which practically the entire scientific and engineering community insisted was not feasible. (The Atlas ICBM weighs in at

120 tons and the Minuteman ICBM at 32.5 tons.) Sheehan also describes the growth in those times of reliance on contractors—he notes the ubiquity even then of nondescript buildings with vague indications of what tenants might be inside, so common now around Washington and defense/aerospace facilities country-wide. Insiders will recognize mild resentments sometimes present in a US military or intelligence contractor-client relationship, such as whether a government agency owns programs whose “actual work,” as certain participants will say, is done by contractors. Competition among government offices for budgets and priority will also sound familiar.

Where might this book fit into the literature of the Cold War? If most Cold War histories can be seen as history from the top down, and if the late physicist and Nobel Laureate Richard Feynman can look at “Los Alamos from Below,” then perhaps Sheehan’s book can be taken as Cold War history from the middle outward. It is a well-researched and innovative exploration of the arms race through the work of a lesser-known pioneer and thus a fresh addition to the literature.



The Intelligence Officer's Bookshelf

Compiled and Reviewed by Hayden B. Peake

Current Topics

Necessary Secrets: National Security, the Media, and the Rule of Law by Gabriel Schoenfeld

A Time to Betray: The Astonishing Double Life of a CIA Agent Inside the Revolutionary Guards of Iran by Reza Kahlili

The Watchers: The Rise of America's Surveillance State by Shane Harris

General

Historical Dictionary of Naval Intelligence by Nigel West

The Oxford Handbook of National Security Intelligence by Loch Johnson (ed.)

Structured Analytical Techniques for Intelligence Analysis by Richards J. Heuer, Jr. and Randolph H. Pherson

Historical

The Chief Culprit: Stalin's Grand Design to Start World War II by Viktor Suvorov

The Deceivers: Allied Military Deception in the Second World War by Thaddeus Holt

Eyes In The Sky: Eisenhower, The CIA and Cold War Aerial Espionage by Dino Brugioni

Hitler's Intelligence Chief: Walter Schellenberg-The Man Who Kept Germany's Secrets by Reinhard R. Doerries

JOHNNY: A Spy's Life by R. S. Rose and Gordon D. Scott

The Making of a Spy: Memoir of a German Boy Soldier Turned American Army Intelligence Agent by Gerhardt B. Thamm

Rome's Wars in Parthia: Blood in the Sand by Rose Mary Sheldon

Spies: The Rise and Fall of the KGB in America by John Haynes and Harvey Klehr

A Spy's Diary of World War II: Inside the OSS with an American Agent in Europe by Wayne Nelson

They Dared Return: The True Story of Jewish Spies Behind the Lines in Nazi Germany by Patrick K. O'Donnell

Intelligence Services Abroad

Nest of Spies: The Startling Truth about Foreign Agents at Work within Canada's Borders by Fabrice de Pierrebourg and Michel Juneau-Katsuya

All statements of fact, opinion, or analysis expressed in this article are those of the author. Nothing in the article should be construed as asserting or implying US government endorsement of its factual statements and interpretations.

Son of Hamas: A Gripping Account of Terror, Betrayal, Political Intrigue, and Unthinkable Choices by Mosab Hassan Yousef

Spying on Ireland: British Intelligence and Irish Neutrality during the Second World War by Eunan O'Hallpin

Current Topics

Necessary Secrets: National Security, the Media, and the Rule of Law, by Gabriel Schoenfeld. (New York: W. W. Norton, 2010), 309 pp., endnotes, index.

What do James Monroe, Thomas Paine, Daniel Ellsberg, Philip Agee, Herbert Yardley, and Thomas Tamm have in common? According to Gabriel Schoenfeld they were all unpunished leakers, and he uses their examples to address three important and related issues. First, does the First Amendment make the press the final arbiter of what can be published? Second, why aren't the leakers prosecuted? Finally, are new laws needed to protect the nation's secrets?

To examine the first question, Schoenfeld uses the *New York Times* decision to defy White House requests not to publish the story about the NSA surveillance program to detect and monitor terrorist activity. After reviewing the substantial and specific dangers pointed out to the *Times*, Schoenfeld challenges its position that the public's right to know and the *Times*' right to decide trump the government's authority. There is, he suggests, a corollary proposition: the "public's right not to know," (259) and the decision should rest with the Executive Branch of government. He then reviews various historical precedents for that view.

As to legal action against leakers, Schoenfeld discusses the leakers noted above and shows that they escaped punishment for different, often inexplicable, legal or political reasons. The *Pentagon Papers* case, he argues, is a good example of exoneration based on legal technicalities. The Philip Agee case, Schoenfeld suggests, could probably have been prosecuted under the Espionage Act, but he is at a loss to explain why he was not. The most recent example involves the Justice Department leaker in the NSA case, Thomas Tamm, who has not been prosecuted even though he stated publicly that he acted because he objected to the program, did not like the Bush administration, and hoped it would damage the president's reelection—which ironically took place even before the *Times* story was published. (263) A decision here will establish a precedent.

Regarding new leaker laws, Schoenfeld thinks they are unnecessary. He analyzes the existing government employee secrecy agreement and concludes it would do the job if implemented consistently. The cases of former CIA officers turned authors Frank Snepp and Victor Marchetti make the point. He uses the Samuel L. Morison case—he sold classified satellite photographs to a commercial magazine—to show that some leakers do go to jail.

In the end, Schoenfeld argues that editors are not justified in deciding what to print “no matter the cost.” (260) Nor should they have “unfettered freedom of action,” which could lead to an imperial press. Editors do have obligations under the law to act in the public good (275) not for their self aggrandizement. *Necessary Secrets* is accurately titled, well documented, and persuasive.

A Time to Betray: The Astonishing Double Life of a CIA Agent Inside the Revolutionary Guards of Iran, by Reza Kahlili. (New York: Threshold Editions, 2010), 240 pp.

Details in his book have been changed for security reasons—Reza Kahlili, for example, is a pseudonym—but that hasn’t diminished the punch of this unusual story. Kahlili grew up in Iran but in the early 1970s went to college at the University of Southern California where he lived with relatives. He returned with a masters in computer science in time for the revolution that brought Ayatollah Khomeini to power. Motivated by the end of the shah’s oppressive regime and visions of a Persian renaissance, Kahlili joined the Revolutionary Guards’s computer division. He might have remained an obscure programmer had not one of his childhood friends joined the operational element of the Guards and sought his assistance setting up a database of dissidents. When several of his dissident friends defied the regime, Kahlili witnessed the cruelty they endured, especially the women, who were routinely executed. When the US embassy was seized and its occupants taken hostage in 1979 he learned of the brutal treatment the Americans received at the hands of the Revolutionary Guards and discovered that the incident was anything but a spontaneous act of students. Such events convinced him he was witnessing the creation of a corrupt, unjust, iniquitous, Islamic fundamentalist Iran.

Kahlili decided to tell the world the truth about life in Iran and took leave to visit a “terminally ill” relative in Los Angeles. Once there, he contacted the FBI and through them the CIA. He writes that his intent was merely to ask their help in revealing what was happening in Iran. To his surprise, the CIA offered him an alternative opportunity—become an agent and penetrate the Revolutionary Guards. And that is what he did.

After training in the United States and London, Kahlili returned to Iran and began reporting. In this book he describes the communication techniques he used and outlines the kind of details he provided and the methods he employed to avoid detection. Despite his careful adherence to procedure, he did come under suspicion, but he survived, thanks to the fortuitous death of his accuser. He also married but did not tell his wife about his secret life. Sometime in the 1990s—he does not date his experiences—the stress became evident to himself and his family. He got permission to visit London and from there, with CIA help, he took his family to the United States. Living under a new name, he became a citizen. His son graduated from the University of California, Berkeley, in 2001. By then his wife knew of his former clandestine life.

In his review of *A Time to Betray*, David Ignatius said he initially doubted this incredible story. But after using his impressive contacts and eventually speaking with Kahlili by phone, Ignatius suggested the CIA should view the book as “a virtual recruitment poster.”¹ But the book is also a very important contribution to the understanding of contemporary Iran and the role of intelligence in the struggle against Islamic fundamentalism.

The Watchers: The Rise of America's Surveillance State by Shane Harris.
(New York: Penguin Press, 2010), 418 pp., endnotes, index.

One answer to the proverbial question “Who watches the watchers?” is Shane Harris. In this book he chronicles “the rise of the surveillance state” using the career of Adm. John Poindexter and his concept of a Total Information Awareness (TIA) as his reference point. In principle, TIA was to be a monumental link-analysis computer program used to collect and analyze all available data—phone calls, credit card purchases, banking transactions, travel details, addresses, etc., public and private, worldwide, 24/7. From these data it was to extract links to terrorist activities. Conceived after the 1983 attack on the US Marine barracks in Lebanon, it was only in the mid-1990s that it was developed, with strict privacy provisions, under contract to DARPA. Before it could be fully tested its existence became public. Media outrage and controversy followed and it was quickly shut down.

TIA wasn't the only program testing this concept, writes Harris. The Army's Information Dominance Center (IDC) had developed a project using open source data off the Internet. Its developers assumed it was free of privacy considerations. Eventually called Able Danger, according to Harris, it produced promising results on Chinese espionage operations in the West and was considered for use in tracking al-Qaeda. But when lawyers became aware of it, they judged that privacy was a major factor and the programmer was instructed to delete the database or go to jail. (132)

Then there was the so-called warrantless surveillance program run by NSA that began after 9/11. After reviewing the well-known controversy that ensued when the program became public, Harris adds that it was only modified, not shut down. And, what is more, the TIA concept was incorporated in the secret continuation.

The Watchers tells the story of these programs and the bureaucratic conflicts that evolved as the Intelligence Community tried to deal with the terrorist threat. Harris devotes considerable attention to the careers of the principal players involved and the role of the media, Congress, and the White House. He does not resolve the question of how to protect privacy and meet the national intelligence mission, but he does suggest that now is the time to debate the issue, not after the next terrorist attack. While his book is thought provoking, Harris's answer to the original question is that only the media can watch the watchers. That too is worthy of debate.

¹ David Ignatius, *Washington Post*, 9 April 2010.

General Intelligence

Historical Dictionary of Naval Intelligence, by Nigel West. (Lanham, MD: Scarecrow Press, 2010), 406 pp., appendix, chronology, index.

Intelligence polymath Nigel West has produced another of his historical dictionaries—there is one on Chinese intelligence in the mill. This one begins with a useful chronology and a historical essay on naval intelligence. It ends with an interesting appendix on “US Navy Signals Intercept Sites,” but no British ones, and a reasonably complete bibliographic essay on the literature, which, however, omits the three volumes on WW II *Secret Flotillas*, by Richard Brooks. In between are more than 600 entries in the dictionary that do not have source references but do discuss naval espionage cases and personalities, naval intelligence organizations, intelligence ships, and codenames. Most concern WW I and II belligerents and Cold War actors. For reasons not given, missing is the Tachibana case that involved, inter alios, Charlie Chaplin’s former valet and Japanese espionage in America. While the current edition is generally accurate, future editions should not claim that Lou Tordella was ever the director of NSA.

Amazon offers some relief from the \$95 price tag but does not offer a digital version—yet. It is a valuable reference work.

The Oxford Handbook of National Security Intelligence, by Loch Johnson (ed.). (New York: Oxford University Press, 2010), 886 pp., footnotes, end of chapter references, index.

As recently as 10 years ago, maintaining awareness of the state-of-the-art in the literature and practice of intelligence required monitoring three quarterly journals and looking out for the occasional reader. This changed in 2007 when Professor Loch Johnson edited a five-volume work on strategic intelligence, followed by single volumes on the subject in 2007 and 2008. And now comes another volume with a new title that he concludes better expresses the field of inquiry. And he is not alone; several others have produced similar works during the same period.¹

The objective of the current handbook is to provide a “state-of-the-art assessment of the literature and findings in the field of national security study.” (4) Toward that end, Professor Johnson has assembled 56 mostly original articles. Their authors are a mix of academics and professionals with experience in the field. They come from seven countries—the United States, United Kingdom, Australia, Germany, Sweden, Israel, and Canada. The articles, presented in 10 parts, cover most elements of the profession. Only the technical aspects are omitted. The introduction has two contributions. In the first, Johnson surveys the field. The second, by Sir Richard Dearlove, examines the topic in light of what he terms the “age of anxieties” (37) in which “interna-

¹ See, for example, Stuart Farson, et al., *Global Security and Intelligence* (Westport, CT: Praeger, 2008).

tionalization of national security has eroded the distinction... traditionally made between home and away, between foreign and domestic security.” (39)

The remaining parts look at some familiar themes such as “intelligence theory,” though no example of what that is or what benefit it would provide is discernible. Other topics include the importance of intelligence history and the role of SIGINT. Each element of the intelligence cycle receives attention as do covert action, counterintelligence, and commercial intelligence. A few case studies, domestic security, intelligence policy, ethics, and accountability round out the coverage.

The final section deals with foreign intelligence services. With characteristic candor, Ephraim Kahana notes that “much of the literature about the Mosad may be considered pure fiction,” before summarizing the Israeli services and their missions. Wolfgang Krieger writing on the German BND notes that unlike most services, it has responsibility for military and foreign intelligence. Another article looks at intelligence in the developing democracies, and the final piece is on intelligence and national security in Australia. US readers will no doubt wish more foreign intelligence services had been included.

This is a very valuable reference work, at least for the present.

Structured Analytical Techniques for Intelligence Analysis, by Richards J. Heuer, Jr. and Randolph H. Pherson. (Washington, DC: CQ Press, 2010), 343 pp., footnotes, no index.

In this volume two experienced analysts argue that intelligence analysis is transitioning from emphasis on a single analyst to a collaborative team. To aid in that transition, they present a collection of analytical methods called structured analysis that capitalize on Intellipedia and social networking to improve results. The book itself has an unusual spiral-bound format with tabs for each well-illustrated chapter. Chapters 2–10 provide a sequential approach to analysis starting with building a taxonomy and continuing with the criteria for selecting techniques and other basics—checklists and alternative methods—necessary to begin. There are also chapters on types of brainstorming, scenario development, hypothesis testing, the importance of assumptions and a new techniques called “structured analogies.” Then comes a discussion of “challenge analysis” that is intended to help break away from conventional modes of thinking and look at a problem from different perspectives. A chapter on conflict management introduces methods of treating opposing arguments. Chapter 10 looks at four techniques, including a new one by Heuer called “complexity manger technique,” designed to help analysts and managers make tradeoffs. Chapter 12 considers what to do when outside support is needed and chapter 13 examines systematic ways of evaluating or validating effectiveness. A final chapter looks at what developments are anticipated in the future. The volume appears to be designed for individual study and team application.

The one thing not included in the book is an example of a successful application that shows how various techniques were tried, accepted, or dismissed

before reaching the conclusion. It would also be valuable to know how the results of using these techniques compare with results produced by a traditional analyst who knows his subject and the languages involved. With these additions this volume would be a definitive work. For now, however, this is the most up-to-date and detailed nonmathematical treatment of this crucial field.

Historical

The Chief Culprit: Stalin's Grand Design to Start World War II by Viktor Suvorov. (Annapolis, MD: Naval Institute Press, 2009), 327 pp., endnotes, bibliography, photos, index.

Who started World War II? Stalin was the guilty party wrote former GRU officer Viktor Suvorov in his book, *IceBreaker*.¹ Hitler only attacked to preempt Stalin's invasion of Germany. The book received little attention in England, though it did much better in Russia as it showed how Stalin overcame a mad dictator. One reviewer noted that it sold only 800 copies in the West, but the first Russian printing alone was 100,000 copies.² Nevertheless, historians took the thesis seriously and analyzed it in a series of papers and books. David Glantz reviews their findings in his book, *Stumbling Colossus*. David Murphy examines it further in his 2005 book *What Stalin Knew*. The unanimous consensus: Suvorov arguments are not credible.³

Now, 20 years later, Suvorov has returned to his thesis in *The Chief Culprit*. He has expanded the historical scope, adding background beginning with the Bolshevik revolution, and he makes interesting comparisons of the two mustached dictators. But his interpretation of certain events is problematic, even confusing. Suvorov characterizes the Hitler-Stalin Pact of 1939 as "Stalin's Trap for Hitler," but he does not support this revisionist judgment with facts. In his discussion of Trotsky's murder in Mexico, Suvorov writes "Trotsky liked the essays" the murderer wrote, which allowed him to "penetrate Trotsky's inner circle." (178) But extensive evidence contradicts this interpretation. And that illustrates the principal deficiency of the book: Suvorov may have the historical context right but he is weak on substantiating cause and effect and offers too many quotes and assertions without sources. In the end, he doesn't prove that "the Soviet Union entered World War II as an aggressor" (278) as a move toward world domination. Suvorov just chooses to interpret events that way.

In the end, Suvorov's interpretations aside, readers are left wondering how Hitler learned of Stalin's purported invasion plans, and that alone justifies a skeptical approach to *The Chief Culprit*.

¹ Viktor Suvorov (aka Viktor Rezum), *Icebreaker: Who Started the Second World War?* (London: Hamish Hamilton, 1990). The book first appeared in France in 1988.

² Andrei Navrozov, www.richardsorge.com.

³ David M. Glantz, *Stumbling Colossus: The Red Army on the Eve of World War* (Lawrence: University Press of Kansas, 1990), 3–8.

The Deceivers: Allied Military Deception in the Second World War by Thaddeus Holt. (New York: Skyhorse Publishing, 2007), 1148 pp., endnotes, bibliography, appendices, photos, maps, index, 2nd edition with new addendum.

British intelligence historian M.R.D. Foot, known for his pithy assessments of a book's essence, said that Gerald Reitlinger's *The SS* was as "depressingly accurate."¹ Of *The Deceivers*, Foot wrote "as good as it is long."² A few details will suggest why.

Thaddeus Holt, a lawyer and former deputy under secretary of the army, conceived the idea for this book in the early 1990s after reading about British deception operations that influenced the invasion of France in 1944. What role, he asked, did the Americans play? During several years of research the scope of the project expanded. The result was a detailed and wide-ranging history of allied deception in WW II. The geographic emphasis is on the war in Northern Africa and Europe, but South Asia, China, and Japan are also included. The story itself is told in two parallel threads. One is about the deception operations themselves, the principles that make them successful, and the organizations involved. The other is about the people who did the work in spite of the appalling amount of bureaucratic infighting.

The central figure is Lt. Col. Dudley Clarke, a maverick officer who had entered the Royal Military Academy at 17 during WW I. Graduated in the artillery, he was too young to serve overseas in the land army, so he joined the Royal Flying Corps and was a pilot in Egypt for the rest of the war. Back with the army at the start of WW II, he served in France and Norway and was involved with the creation of the Commandos—he gave them their name—and before being called to Egypt and assigned to the staff of Gen. Sir Archibald Wavell and told to develop deception plans. With no direct experience and starting alone, he formed a secret planning section called "A" Force. Among the many deception operations Holt describes—not all successful—was the one that misled the Germans about the main thrust of Montgomery's attack at El Alamein. A key to the success of deception, said Clarke, was not to focus on what you want the enemy to think, but what you want him to do. Clark used all means to deceive the enemy. SIGINT was key to convincing the Germans that the British order of battle had division and corps-level units that did not exist. He also employed agents to whom he passed deceptive intelligence intend to reach German ears. At one point, in an operation never fully explained, he disguised himself as a woman in Madrid, only to be arrested. Despite considerable embarrassment, he survived the ordeal.

Deception operations were not confined to the Middle East. Holt recounts the work of the London Controlling Section (LCS) under Col. Johnny Bevan. This group was responsible for the deception connected with Overlord, the invasion of Europe. Also described are Operation Mincemeat, which was made

¹ M.R.D. Foot, *SOE in France: An Account of the Work of the British Special Operations Executive in France 1940–1945* (London: HMSO, 1966), 461.

² M. R. D. Foot, review of *The Deceivers*, *English Historical Review*, V120 (2005): 1103-04.

famous in *The Man Who Never Was*,¹ and the Double Cross Committee's use of double agents supported by ULTRA. In the telling, we learn of the bureaucratic conflicts that were overcome to make these operations successful. In Southeast Asia, Holt tells of Peter Fleming—older brother of Ian—and his elaborate attempts to deceive Japanese intelligence. (Holt rates the Italians as the best intelligence service among the Axis nations, the Japanese the worst.)

Turning to the American role, Holt explains that when they entered the war their deception plans and organization could be characterized as disorganized at best. And it was only in 1943 that a degree of order was imposed by Col. Norman Smith, the closest planner in terms of competence, to the LCS's Bevan. Cooperation with the FBI, tasked to run some double agents, was equally troubled and the result was not very effective. Here too the conflicts among personnel were fierce and never totally resolved.

In the epilogue, Holt tells what happened to the key players after the war. He also assesses the value of deception, concluding that with the exception of Overlord its contribution is hard to measure. When compared with the double-agent operations, however, he concludes that they "had far more influence than the elaborate effort at signals deception." (779)

The Deceivers provides a historical picture of deception that is truly unique. With descriptions of hundreds of operations and impressive detail concerning all the principals, all extensively documented, Holt's book stands as the definitive work on the subject.

Eyes in the Sky: Eisenhower, the CIA and Cold War Aerial Espionage by Dino Brugioni. (Annapolis, MD: Naval Institute Press, 2010), 572 pp., endnotes, photos, index.

Dino Brugioni was more than "present at the creation" of America's national photo-interpretation capability. He was a major player and, equally important, an astute observer until long after it became an accepted source of national intelligence. In *Eyes In The Sky* his focus is on president Eisenhower's little known contributions to the origins and development of strategic intelligence programs—especially photographic systems—but his own first hand comments add color and insights not available from any other source.

Brugioni's story begins with a review of the origins of aerial surveillance from balloons in the 18th century to the end of WW II. The balance of the book is devoted to the Cold War and the demands it created that were met by a group of remarkable innovators stimulated and supported by President Eisenhower. At the big picture strategic level, they included Edwin Land the developer of the Polaroid camera process, Generals Doolittle and Goddard, James Killian and Amron Katz. He tells how, at the working level, Richard

¹ See Ben MacIntyre, *Operation Mincemeat: How a Dead Man and a Bizarre Plan Fooled the Nazis and Assured Allied Victory* (New York: Crown, 2010)

Bissell, Clarence Kelly Johnson, Allen Dulles and Arthur Lundahl combined their administrative and technical skills to create the U-2 and the first satellite programs that gave the country the ability to monitor Soviet military and industrial capabilities. Brugioni takes care to mention many of the other players—British and American—that played key roles. Their names will be familiar to numerous readers.

Lundahl's contributions get detailed attention as Brugioni describes the origins of the National Photographic Interpretation Center and the role it played in resolving the so-called missile-gap issue, the Cuban Missile Crisis, and the monitoring of the Soviet strategic missile program. Lundahl did more than create an organization, he briefed the president, often with Brugioni's help, using photos from the new intelligence tools he had the foresight to support. These achievements did not come without bureaucratic battles and Brugioni tells of the conflicts between the CIA and the Air Force that Eisenhower was forced to decide. How the challenges from Gen. Curtis LeMay were defeated—Brugioni played a direct role—are of particular interest.

Brugioni adds some new details, as for example the story of the "Caspian Sea Monster" that baffles photo interpreters to this day. He also tells of the Genetrix balloon program, the conflicts surrounding the U-2 overflights, and the patience Eisenhower displayed when the first 13 satellites launches failed. While the development of the A-12 Oxcart and SR-71 platforms and their uses in several conflicts are included, Brugioni concludes that the Corona satellite program is President Eisenhower's greatest legacy because it "laid the groundwork for all the future US satellite reconnaissance systems." (392)

Eyes in the Sky is history firsthand in which Eisenhower's role is finally documented. Dino Brugioni has made a fine contribution to the intelligence literature.

Hitler's Intelligence Chief: Walter Schellenberg—The Man Who Kept Germany's Secrets, by Reinhard R. Doerries. (New York: Enigma Books, 2009), 390 pp., endnotes, bibliography, appendices, glossary, photos, index.

Walter Schellenberg was a Nazi SS intelligence officer whose controversial career is examined here by a skillful historian. Schellenberg was born in 1910; by 1936, he had graduated from law school—Universities of Marburg and Bonn—and joined the Nazi Party. After a brief period in private practice, he left to join the SS in Berlin, where he came to the attention of Reinhard Heydrich, who tested his abilities with brief special assignments in Vienna and Italy. When Schellenberg returned to Berlin he was assigned to Gestapo counterespionage. While there, still as a very junior officer in November 1939, Schellenberg participated in the famous Venlo Incident—a deception operation that resulted in the arrest of the MI6 head of station. By the Fall of 1941, Schellenberg's career had soared and he became head of Amt VI, the Foreign Intelligence Service of the SD, where he served during most of WW II.

Author Doerries gives most attention to Schellenberg's wartime activities, which are open to several interpretations. Doerries shows that one reason for

the uncertainty is that Schellenberg's memoirs were published after his death in 1951, based on notes assembled by others. The American edition differed from the British version, and both differed from the German version.¹ Moreover, postwar interrogations of Schellenberg conflicted with other sources, including a short autobiography he wrote in Sweden, which is published, for the first time, in this volume as an appendix. One thing Doerries does not explain, is whether Schellenberg ever found out about the agents that Britain ran against Germany as part of the Double Cross system.

In the narrative, Professor Doerries attempts to identify and sort out the differences. The Venlo Incident is a case in point. He shows that it was less a well-planned operation than an ad hoc venture that turned into a kidnapping only after an attempt on Hitler's life. But, Doerries notes that Schellenberg was quick to capitalize on its apparent success for career purposes. Likewise Doerries speculates as to why Schellenberg failed to follow Hitler's order to kidnap the Duke and Duchess of Windsor and got away with it. And there is considerable detail on the bureaucratic battles waged with his arch enemies Heinrich Müller, head of the Gestapo, and Ernst Kaltenbrunner, chief of the RSHA, the Nazi umbrella security organization.

Aside from his SS service, several things increased Schellenberg's controversial reputation with the allies. The first was his helping "an extraordinarily large number" (xiv) of Jewish prisoners escape from concentration camps near the end of the war. He used this shamefully self-serving act and the help of his mentor Heinrich Himmler, to get an appointment as diplomatic liaison with the Red Cross in Sweden. A second item was his service testifying at Nuremberg against his former colleagues.

Other sources of controversy are revealed in the final chapter of *Hitler's Intelligence Chief*. Here Doerries tells of Schellenberg's time in Sweden and his extradition to Germany and then to Britain. He was much sought after as a former head of the Nazi foreign intelligence apparatus, but his interrogations yielded mixed judgments. The British concluded that he "had not produced any evidence of outstanding genius." The Americans, on the other hand, reported that he had in one case at least been "both lucid and credible." (278) Here Doerries explains the detailed charges against Schellenberg that surfaced during his interrogations. During 1948–49, he was tried and sentenced to six years by US authorities. Released in 1950 for health reasons, he sought treatment in several locations, eventually landing in Turin, Italy, where he died in 1952.

Professor Doerries has documented his account with recently released documents from allied archives. The Germans records remain classified. Thus the final version of Walter Schellenberg's career is still to be written.

¹ See Walter Schellenberg, *The Labyrinth: The Memoirs of Walter Schellenberg, Hitler's Chief of Counterintelligence* (New York: Harper & Brothers Publishers, 1956); *The Schellenberg Memoirs: A Record of Nazi Secret Service*, trans. Louis Hagen (London: Andre Deutsch, 1956).

JOHNNY: A Spy's Life by R. S. Rose and Gordon D. Scott. (University Park: The Pennsylvania State University Press, 2010), 462 pp., endnotes, bibliography, photos, index.

Johnan Heinrich Amadeus de Graaf, called Johnny by his friends and Jonny X by his case officers, is not one of the famous 20th century spies, though his existence is confirmed in Christopher Andrew's *Defend The Realm*.¹ Born in Germany, he joined the merchant marine as a young man, became a communist radical, and was imprisoned during WW I for mutiny. Freed in November 1918, Johnny continued his political activism while working in German mines. When sent to a Berlin conference to represent his party faction, he was linked to Horst Wessel's murder and escaped to Switzerland, leaving his family behind. It was there that he was recruited by Soviet military intelligence and sent to Moscow for training. After some eye-opening assignments supervising German refugee camps in the Soviet Union, he was sent abroad and conducted operations in Romania, Berlin, Prague China, and London. It was while in London that he volunteered to work for MI6 in 1933. Sent by the GRU to Brazil, he served as a double agent until WW II began. After a period in prison as a suspected Nazi, he escaped to London and dropped off the GRU radar screen. The British used him to infiltrate German POWs and later sent him to Canada to do the same. After the war he volunteered to work for the FBI. He eventually retired with his second wife in Canada and operated a bed-and-breakfast. Although the GRU learned of his defection after the war, they decided to leave him alone.

JOHNNY contains intriguing details about GRU tradecraft training and de Graaf's relationship with General Berzin, head of the GRU. Likewise, the authors describe his handling by SIS officer Frank Foley, later famous for helping Jews escape the Nazis. It is an unusual story of a double agent who fought the Nazis and the communists and survived.

The Making of a Spy: Memoir of a German Boy Soldier Turned American Army Intelligence Agent, by Gerhardt B. Thamm. (Jefferson, NC: McFarland & Company, Inc., Publishers, 2010), 223 pp., endnotes, photos, index.

The Thamm family moved to Detroit in the 1920s and their son Gerhardt was born there in 1929. When his father lost his job during the Depression, they returned to Germany. Gerhardt was conscripted into the Wehrmacht in January 1945 and fought the Soviets until the end of the war. The NKVD captured his platoon and sent them into slave labor for 17 months. When he was repatriated and rejoined his family, the Soviets had confiscated their land. They managed to move to West Germany, but times were not easy there either. Gerhardt applied for a US passport and returned to the United States where he joined the army. With his language skills, he was assigned to military intelligence and eventually returned to Germany with the Counterintelligence Corps (CIC). *The Making of a Spy* covers his two years as a CIC agent,

¹ Christopher Andrew, *Defend The Realm: The Authorized History of MI5* (New York: Alfred A. Knopf, 2009), 178. De Graaf is inexplicably left out of the index.

although he comments briefly on several subsequent tours overseas with the Army Security Agency and assignments with the Office of Naval Intelligence and the Defense Intelligence Agency. With at least one exception, he has changed the names of the individuals with whom he worked. The exception is Sgt. 1st Class (later Col.) George Trofimoff, now a convicted KGB agent serving life in prison, thanks to Vasili Mitrokhin.

While Thamm tells a compelling personal story, the strength of the book lies in his descriptions of the training, tradecraft, and agent-control techniques he developed in the field.

Rome's Wars in Parthia: Blood in the Sand, by Rose Mary Sheldon. (Portland, OR: Vallentine Mitchell, 2010), 303 pp., end of chapter notes, bibliography, maps, index.

The ancient Parthian Empire encompassed much of what is today Iran and Iraq. Periodically, for approximately 300 years, beginning about 100 BC, the Roman and Parthian Empires fought territorial wars. Virginia Military Institute history professor Rose Mary Sheldon acknowledges the many histories written about of these wars, while pointing out that all have focused on their military and political aspects, to the neglect of intelligence. *Rome's Wars in Parthia* attempts to correct that deficiency.

In fact what the book reveals is that more is known about the lack of intelligence, beyond normal reconnaissance and couriers, than its use. In campaign after campaign Sheldon reports what was not known or even sought after, and the consequences of such ignorance. The chapter entitled *What Did the Romans Know and When Did They Know It?* illustrates this point in general terms. A particular example, one of many, discusses the failed invasion of Parthia by the Roman commander Crassus. He proceeded before assessing the strength and capabilities of his enemy and was defeated.

Sheldon frequently uses modern terminology in her narrative, as for example, “covert action” and “shock and awe.” The former, however, looks more like traditional secret diplomacy. The latter is better thought of as the use of overwhelming force. These concepts have a connotation that doesn't fit well with ancient military battles.

Rome's Wars in Parthia is extensively documented and intended for a “general audience.” Nevertheless, readers who lack familiarity with the history of those times will need to consult the Wikipedia to identify and understand the many personages and countries named. In her concluding chapter, Sheldon attempts some parallels with the current situation in the Middle East, none of which deal with intelligence, though they warrant consideration. This is a unique book and will be of real value to those interested in intelligence and ancient history.

Spies: The Rise and Fall of the KGB in America by John Haynes and Harvey Klehr. (New Haven, CT: Yale University Press, 2010), 704 pp., endnotes, bibliography, photos, index.

The headline in the *New York Times* of 21 December 1948 read: “Fall Kills Duggan, Named With Hiss in Spy Ring Inquiry.” Prominent friends were outraged at the suggestion that former State Department officer Lawrence Duggan had been a Soviet spy. Eleanor Roosevelt wrote “How anyone could suspect him of un-American activities seems inconceivable to me.”¹ In 1995, historian Arthur Schlesinger, Jr., referring to Duggan, wrote that Yale University Press “should not have permitted this book to blacken the name of a man whom many knew as an able public servant.”² The book was *The Secret World of American Communism*, by John Haynes and Harvey Klehr. Their most recent book, *Spies*, written with Alexander Vassiliev, a KGB officer turned journalist, lays any lingering doubts to rest—“Duggan was a Soviet spy.” (220–45)

The Duggan story is just one of many in *Spies*. The first chapter reveals new documentation that Alger Hiss was a GRU agent working with Duggan. The second chapter discusses the many atom spies, several not previously known. Surprisingly, the authors conclude that although Robert Oppenheimer had been a member of the Communist Party, he had never become a Soviet agent. Russell McNutt, on the other hand, was never suspected, but *Spies* documents that he was recruited by Julius Rosenberg. There is new material too that will disturb the defenders of Ethel Rosenberg. Later, the authors add supporting details to previously known cases in the major government departments, including OSS.

Perhaps the most controversial chapter in the book concerns the 22 journalists who worked for the NKVD/KGB in various capacities. (145) That the iconic I. F. Stone was included, enraged many of Stone’s longtime friends and supporters, including his biographer D.D. Guttenplan, who questions the validity of the KGB documents on which *Spies* relies.³ The sources for *Spies* are contained in eight notebooks made by Vassiliev at the request of the SVR.⁴ As part of a joint Russian-American book program started in the 1990s, Vassiliev was to provide extracts from KGB case files and give them to historian Allen Weinstein after scrutiny by security. The resultant book was called *The Haunted Wood*.⁵ But Weinstein did not use all of Vassiliev’s material. In 2002, Vassiliev, then living in London, contacted Haynes and Klehr to see if they wanted to exploit the notes. *Spies* was the result.

¹ Eleanor Roosevelt, “My Day,” *New York World-Telegram*, 24 December 1948.

² Arthur Schlesinger, Jr., “The Party Circuit,” *The New Republic*, 29 May, 1995: 39.

³ See for example, D. D. Guttenplan, “Red Harvest: The KGB In America,” *The Nation*, 25 May 2009. For more detail see Guttenplan, *American Radical: The Life and Times of I. F. Stone* (New York: Farrar, Straus & Giroux, 2009).

⁴ The original notebooks in Russian, together with English translations, are now in the Library of Congress where anyone may view them.

⁵ Allen Weinstein and Alexander Vassiliev, *The Haunted Wood: Soviet Espionage in America—the Stalin Era* (New York: Modern Library Paperback, 2000).

In his defense of Stone, Guttenpan has argued that either the SVR slanted the message by controlling the material to which Vassiliev was given access or that Vassiliev left out material or failed to recognize the value of key items exonerating Stone and did not make notes about them. The authors deals with these doubts in different parts of *Spies* and make an over whelming case that the extracts are genuine.

The argument over sources can never be resolved completely, however. Even if the KGB/GRU archives are opened to scholars, some will say Soviet sources can't be trusted. But in the interim, *Spies* is the most complete and accurate account to date. It shows the importance of a good all-source counterintelligence service when a nation is opposed by forces with a powerful and antagonistic ideology.

A Spy's Diary of World War II: Inside the OSS with an American Agent in Europe by Wayne Nelson. (Jefferson, NC: McFarland & Company, Inc., Publishers, 2009), 204 pp., photos, index.

In December 1941, Allen Dulles, then a lawyer in New York, wrote a letter recommending his secretary, Aubrey (Wayne) Nelson, for a position in the Navy. Dulles did not mention that Nelson had partial vision in one eye or that he was a graduate of the Feagin School of Dramatic Art. Wayne was his stage name. He was not accepted, so Dulles recommended him for a position in Col. William Donovan's Office of the Coordinator of Information (COI) where he was accepted and worked as an assistant to Donovan. In the summer of 1942, aware that Nelson wanted an overseas assignment, Donovan offered a position in the OSS in London. When Dulles was informed, he suggested that Nelson go with him to Bern instead, but before that could be arranged, the Swiss-French border had closed. So Nelson volunteered for North Africa and after a series of assignment changes began his overseas career there. He began his diary on 12 February 1943 on the ship to North Africa. His final entry was on 15 February 1945. He wrote the entries in a self-taught shorthand on whatever paper was to hand and placed them in a briefcase he carried throughout the war. He had plans of turning the diary into a play, but that never happened. As his wife explains in the introduction to this volume, she and her daughter found the briefcase after his death and after translating and arranging the entries in chronological order, edited the diary in its present form.

The entries are short and often mention well-known OSS figures—Max Corvo and Carleton Coon and Michael Burke are examples. Nelson describes missions conducted with the navy to land and retrieve agents from Sardinia. Later he tells of his experiences as a case officer running agent operations in Corsica and Italy before his major effort in the invasion of southern France, Operation Dragoon. As the army moved North, his OSS detachment briefed French penetration agents and worked with Odette Sansom of SOE. After V-E Day, Nelson served on the Reparations Commission in Moscow, Berlin, and at the Potsdam Conference, though his diary does not comment on these assignments.

After the war Nelson worked in Hollywood as an adviser on *13 Rue Madeleine*, a film about the OSS with Jimmy Cagney. He then helped Dulles write his book, *Germany's Underground*. Assigned to the Joint Chiefs of Staff, he helped Kermit Roosevelt write the *War Report of the OSS*. Nelson joined CIA in 1949, where he became a case officer, met his wife Kay, and retired in 1970.

The diaries, with an introduction and epilogue by his wife, are a fitting tribute to a modest and brave intelligence officer.

They Dared Return: The True Story of Jewish Spies Behind the Lines in Nazi Germany by Patrick K. O'Donnell. (Cambridge, MA: Da Capo Press, 2009), 239 pp., endnotes, photos, index.

In his 1979 book about the OSS in Europe,¹ Joseph Persico devoted several chapters to Fred Mayer, a Jewish Sergeant born in Germany, who volunteered with several of his compatriots for risky OSS missions behind German lines. In *They Dared Return*, Patrick O'Donnell devotes an entire book to the subject. Thus the reader learns more about each of the brave Jewish officers before and after they joined the Army. Some things are administrative in nature, as for example their training at the Congressional Country Club in Maryland. But others are operationally significant. For example, at one point while stationed in Italy, according to Persico, Mayer interviewed a POW prospect for a mission. In O'Donnell's account, we learn that Mayer was himself in a camp housing German POWs, posing as a prisoner and improving his German while observing Axis prisoners who might be used as OSS agents. It was there that he noticed the POW, Franz Weber, and later had him brought to his office for questioning. The obviously surprised Weber was accepted. In another instance, the case of double agent Hermann Matull is told for the first time.²

Mayer's penultimate accomplishment, after being captured and tortured by the Gestapo, was arranging the surrender of Innsbruck to the Allies without a fight. The book ends with a not-quite-up-to-date summary of where the key characters are now. The six appendices are copies of mission debriefings that provide more details. It is a good story, well told.

Intelligence Services Abroad

Nest of Spies: The Startling Truth about Foreign Agents at Work within Canada's Borders by Fabrice de Pierrebourg and Michel Juneau-Katsuya, trans. Ray Conlogue. (Toronto: HarperCollins Canada, 2009), 372 pp., endnotes, no index.

Fabrice de Pierrebourg is a Canadian journalist. Michael Juneau-Katsuya is a former member of the Canadian Security Intelligence Service (CSIS). They have assembled a collection of espionage anecdotes and commentaries

¹ *Piercing the Reich: The Penetration of Nazi Germany by American Secret Agents in World War II* (New York: Random House, 1979)

² See National Archives and Records Administration, RG492, Entry 246, Box 2059 and Deadwood Folders.

dealing mainly with Canada, but overlapping to the United States, United Kingdom, China, and Russia. Though some of their stories on China appear valuable, others have a *Weekly Reader* plot depiction parsimony, some are just wrong, and most are undocumented.

Questions concerning accuracy are raised by unsupported statements like, “the overall extent of espionage today is much greater than it was during the Cold War.” (3) A more specific example follows from the comment that RCMP Sgt. Gilles Brunet approached Vladimir Vetrov, (Farewell) in Canada when other sources say that couldn’t have happened for good reason: Brunet was dead. On the topic of US and British services, it is not true that William Stephenson was coded-named *Intrepid*, that OSS was Stephenson’s idea, or that he was dispatched by Churchill as a personal representative to Roosevelt. And, Ian Fleming did not say James Bond was modeled on Stephenson, and the source cited in the book doesn’t say he did.

Few will dispute that *Nest of Spies* is an intriguing title or that it offers an interesting view of Canadian intelligence. But all should be watchful for careless errors and of its frugal sourcing. In short, *caveat lector!*

Son of Hamas: A Gripping Account of Terror, Betrayal, Political Intrigue, and Unthinkable Choices, by Mosab Hassan Yousef. (Carol Stream, IL: Tyndale House Publishers, 2010), 265 pp., endnotes, glossary, no index.

In 1996, Mosab Yousef was arrested in Ramallah by Shin Bet, the Israeli security service, for buying guns. The son of a founder of Hamas, he had a detailed knowledge of its personnel and its operations. His initial confinement was long and harsh. But gradually Shin Bet eased the pressure and then asked for “his help.” He decided to pretend cooperation, get released and then seek revenge. Freedom did not come quickly or easily. He first had to convince his fellow Hamas inmates that he was still one of them. Only then was he allowed to go home. *Son of Hamas* tells how Yousef came to admire the Israelis and instead of revenge, he became their agent for more than 10 years working for “peace against the zealots.”

Shin Bet was clever in its cultivation of Yousef. Before it tasked him for any information, it helped him get a job to explain the financial support it would provide to complete his education. Working with his father Yousef became a trusted associate and helped with operational details while keeping his handler informed. In return Shin Bet promised to keep his father off the assassination list of known Hamas leaders, a promise it kept. Yousef also provided information on upcoming operations of the Islamic Jihad, the suicide bombers of the Al-Aqsa Martyrs’ Brigade, the second Intifada, and the Hamas relationship to Yasser Arafat. Yousef explains how, in the midst of his dangerous clandestine life, he learned about Christianity and eventually became a Christian.

After a decade of this secret life, Yousef had had enough. He decided to quit and emigrate to the United States. Shin Bet told him it would have to arrest his father since he was on its assassination list and could not be protected if Yousef left. Nevertheless, leave he did, and today he lives under his true name in Cal-

ifornia. When he called his father in prison and told him what he had done, only silence followed. Today he gives talks about the dangers of Islamic terrorism.

Son of Hamas is a fascinating memoir by a brave young man. On a personal level, Yousef hopes it will show potential terrorists there is an alternative to their lives. On an operational level, it provides details about the tradecraft of both sides. Equally significant are valuable insights into the complex Arab-Israeli conflict. It is an important source for those trying to understand the politics of the Middle East.

Spying on Ireland: British Intelligence and Irish Neutrality during the Second World War by Eunan O’Halpin. (New York: Oxford University Press, 2008), 335 pp., footnotes, bibliography, index.

Hans Marschner was arrested soon after parachuting into Ireland in 1941. He carried a substantial amount of British pounds (counterfeit it turned out), a radio and a microscope, and Irish intelligence (G2) concluded he was a spy with Irish associates. But he claimed his contact would come from Britain. MI5 confirmed Marschner’s contact was a double agent named *Rainbow*. (103ff) This seemingly routine exchange between security services was anything but, and *Spying on Ireland* tells why.

Winston Churchill was not happy that the Irish Free State (today’s Republic of Ireland) declared neutrality during WW II. Britain—strongly supported by the United States—feared Ireland would cooperate with the Axis powers. This didn’t happen, and the British knew it because the intelligence services of both countries developed an unofficial clandestine relationship that continued throughout the war. Later, OSS would join in. (199) In addition to counterespionage—see *The Basket Case* for another example—the G2 developed an impressive signal-interception and code-breaking capability. Results from the illegal radio in the German legation, plus those of Japan and Italy were shared with Britain. Both MI5 and MI6 maintained contacts in Ireland that were so important that they defeated SOE attempts to operate there. The Irish, in turn, shut down the Irish Republican Army for the duration of the war.

Recently released documents have allowed Trinity University professor Eunan O’Halpin to study the intelligence relationship between G2 and MI5-MI6. He explains, in considerable detail, how it fit the political realities of wartime Ireland. The latter included the “American Note Crisis” in 1944 that concerned demands to close Axis legations in neutral nations. Valuable links had been developed in Switzerland, Persia, Afghanistan, among others that the intelligence services wanted to maintain. In Ireland, Éamon de Valera, the Taoiseach (head of government), stood firm and fears of leaks concerning the upcoming invasion proved unwarranted.

Spying on Ireland has extensive documentation that shows how intelligence services can work together in unusual circumstances. It is a very valuable contribution to the history of WW II intelligence.

